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ABSTRACT

The text focuses on identification criteria and characteristics of gifted and talented students in the context of educational programming. The section on characteristics discusses kinds of intelligence, indicators of giftedness, student characteristics that may pose difficulties for the classroom teacher (e.g., persistence, criticalness, and tendency to master generalizations at the expense of details), definition of giftedness in an educational context, distinction between the concepts of gifted versus talented, and the special characteristics of gifted underachievers, minority gifted, and gifted females. The second section describes types of identification instruments and procedures, as well as specific procedures implemented by selected programs for the gifted. A two-stage identification procedure is recommended. Procedures tailored to identification in such specific areas as intellectual ability, academic talent, leadership, and visual and performing arts are noted. Approximately half the text consists of supplementary materials which include lists of characteristics of gifted and talented individuals, sample checklists, rating scales, and recommendation and evaluation forms. Information on representative group and individual achievement and intelligence tests, and on tests for assessing higher-level thinking behavior, is presented in chart format. Lists of selected print and media resources conclude the supplementary material. (JW)

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Characteristics and Identification of Gifted and Talented Students

Third Edition

by Frederick B. Tuttle, Jr.
Laurence A. Becker
Joan A. Sousa

EC210 788

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A National Education Association Publication

Characteristics and Identification of Gifted and Talented Students

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AUTHORS' PREFACE TO THE THIRD EDITION

When the first edition of *Characteristics and Identification of Gifted and Talented Students* was written, the resurgence of interest in gifted education was beginning to gather formidable strength and momentum. Since then the need to recognize and provide for gifted students in our schools has been generally accepted. Although varied, programs to meet the needs of the gifted have been developed in schools throughout the country, especially at the elementary levels. Much of the early energy that provided the momentum for the gifted movement in the 1970s and early 1980s has been channeled into other areas. These areas, such as critical and creative thinking, have incorporated many of the programmatic concerns of educators of the gifted. (See *Program Design and Development for Gifted and Talented Students,* Third Edition, for examples of some of these approaches.)

In spite of these trends in programs for gifted students, the importance of recognizing their characteristics and needs exists as much now as it did in the seventies. The issues that were paramount then are equally relevant now. We addressed many of these, such as problems encountered by gifted students, multiple criteria for identification, use of standardized tests, and minority gifted, in previous editions. In this edition we have expanded these issues and also addressed additional ones such as right and left brain functions, the underachieving gifted, preschool education for the gifted, and gifted females.

As with previous editions, our purpose in presenting this material is to raise awareness of issues and to provide some concrete illustrations for describing the program needs of gifted students as well as for establishing appropriate identification procedures. Consequently, we have only skimmed the surface of many major areas, such as kinds of intelligence, and refer readers to other sources for more in-depth treatment. We do not consider the illustrations provided as the best approaches but rather as

examples of different types of approaches. Each school system has its own circumstances that must be considered when designing its identification procedures. Therefore, our hope is that readers will find elements of different approaches applicable to their particular situations and adapt them accordingly. Whether part of a more general systemwide goal, such as teaching critical and creative thinking, or a specific need, such as reaching the underachieving gifted in the elementary school, awareness of the characteristics, needs, and various methods to identify the individual gifted student remains vital to helping students reach their potential.

Many believe that only those directly involved with programs for the gifted need be concerned with characteristics and identification. To be sure, those directly involved do have a special concern for gifted students and such knowledge is vital to developing and implementing a successful program. It may be even more important, however, for other teachers and administrators to become well acquainted with the characteristics and needs of the gifted. All teachers work with some gifted students. Even special education teachers work with gifted students whose abilities have been overshadowed by a learning disability. All educators, then, should have an awareness of the characteristics, needs, and potential difficulties facing gifted students if we are to provide quality education for each student based on individual needs and abilities.

CHARACTERISTICS

CHARACTERISTICS

A Way of Perceiving

Persons are gifts . . . . . wrapped!
Some are wrapped beautifully; they are
attractive when I first see them.
Some come in ordinary wrapping paper.
Others have been mishandled in the mail.
Once in a while there is a special delivery!
Some persons are gifts which are very loosely
wrapped, not sealed.
Others are tightly wrapped, practically locked,
enigmas really, almost forbidding.
But the wrapping is not the gift!
It is easy to make this mistake.
It is very amusing when babies do it.
Sometimes the gift is very easy to open.
Sometimes I need others to help.
Is it because some are afraid?
Does it hurt to be known truly, honestly?
Maybe they have been opened before and thrown
away, discarded.
Maybe such a gift isn't for me, too good for me.
Maybe I'm not ready; I'm not open. I'm different.
Maybe I don't recognize the gift, that it is for me.
Maybe I see this gift as a threat and not an invitation.
I am a person ...
Therefore I am a gift, too.
Perhaps I have never accepted the gift that I am.

–Anonymous

If nothing else, a program for gifted and talented students should make all teachers aware of the potential for giftedness in individuals. Some student behavior that many consider disruptive may, at times, indicate giftedness. This viewpoint should raise expectations and possibilities for all students.

The lists of characteristics of gifted individuals are almost as numerous as the students themselves. Many educators have

published such lists and have derived a variety of definitions for this population. However, the specific school or teacher may find that lists fail to consider the unique resources, goals, and community of the particular school or district. A workable definition of gifted and talented may not be so easy to develop as one might once have believed.

When asked, "Which of the students you presently teach knows more about a subject than you do?" some teachers state they cannot name any such student. The overall purpose of this text is to help teachers at all levels, primary through secondary, become more sensitive to those individuals in their classes who have keen interests, broad experiences, superior knowledge, or perhaps a different way of viewing the people and places that comprise their learning environments. In many cases gifted and talented pupils go unnoticed and consequently fail to continue to develop their potential throughout their school careers. These students deserve the same opportunity as others to develop to the fullest extent possible.

In many academic situations the existence of gifted and talented students may not even be recognized, however. If the focus is on the acquisition of content, particular attention may be paid to learners who have considerable difficulty with the content and who have fallen behind the others. In addition, students who fulfill the goals of neatness, punctuality, and appropriate classroom behavior are often rewarded, while those who do not conform to these expectations are penalized. Sometimes the truly gifted succeed only outside the curriculum or outside the school. Too frequently those behaviors that may indicate superior abilities serve to create additional difficulties and problems.

KINDS OF INTELLIGENCE

In her book, *Growing Up Gifted,* Barbara Clark provides her interpretation of Cattell's definition of intelligence. This brief definition has implications for the characteristics of the gifted as well as for program development. "'Intelligence' is a composite or combination of human traits, which includes a capacity for insight into complex relationships, all of the process involved in abstract thinking, 'adaptability to problem solving, and capacity

to acquire new capacity' (Cattell, 1971, p. 8)" (G, p. 8).* The key words are "composite" and "capacity."

Although often viewed as a single entity, intelligence involves many different aspects and may be represented through a variety of forms. A single score on an IQ test by itself does not indicate presence or absence of intelligence. Intelligence tests may be useful predictors of academic performance as they focus primarily on academic areas such as reading, mathematics, writing, and logic. However, they do not assess creativity, motivation, or many of the other factors that contribute to the entity of an "intelligent" person. As Restak illustrates,

> In fact, intelligence is a smorgasbord of widely varying abilities.... Some people are astonishingly adept at mathematics but find it difficult to write a letter.... How would one gauge the intelligence of a child who, with no prior training or instruction, can unscramble a Rubik's cube in 30 seconds? (V, pp. 110–11)

In addition, intelligence is "capacity" or potential, and as such needs nurturing to reach the capacity. As Clark indicates, "High intelligence, advanced or accelerated brain function—whether in cognitive abilities such as the capacity to generalize, to conceptualize, or to reason abstractly, or in specific academic ability, leadership, creative behavior expressed through visual and performing arts—results from the interaction between inherited and acquired characteristics" (G, p. 8).

The achievement of one's potential intelligence is dependent both on interaction between the individual and the environment and on interaction within the individual. The human brain is divided into two hemispheres connected by a collection of fibers called the "corpus callosum." Research into the functions of these hemispheres has provided us with some important insights for education of the entire individual. Body functions are controlled by the opposite sides of the brain. The right side of the body is controlled primarily by the left hemisphere of the brain, while the left side is controlled by the right hemisphere.

In addition to specialization of bodily functions, the hemispheres also specialize in different types of thought:

*Letters in parentheses refer to the Additional Resources for the Third Edition beginning on page 158.

The left brain is most responsible for linear, sequential, analytic, rational thinking. Reading, language, the computational aspects of mathematics, the inquirer, and the critic are located in this hemisphere. Thought of a metaphoric, spatial, holistic nature is the province of the right hemisphere. Here we find involvement with the creation of art, music, the concepts of mathematics, synthesizing, intuitive knowing, and a more coherent perceptual style. The right brain seems better at passive comprehension, the left at active articulation. Some ways of differentiating functions of the left and right brain that have been suggested follow:

LEFT	RIGHT
math, history, language	self, elaborates and increases variables, inventive
verbal, limits sensory input	nonverbal perception and expressiveness
sequential, measurable	spatial
analytic	intuitive
comparative	holistic
relational	nonreferential
referential	integrative
linear	Gestalt
logical	imagery
digital	better at depth perception, facial recognition
scientific, technological	mystical, humanistic*

Although this simplified division of work between the right and left hemispheres is helpful to educators in analyzing curriculum and developing programs to meet many different kinds of learning, the actual division is far more complex. One major complication is the fact that the brain is an evolutionary organ, constantly being modified by experiences and circumstances. Several experiments have demonstrated that people may "use different parts of their brains to do the same thing" (U, p. 250). Consequently, it may be more accurate to view the specialization of the two hemispheres and that of general processes rather than specific activities. Neurologist Richard Restak explains the general specializations:

**Growing Up Gifted: Developing the Potential of Children at Home and at School*, 2d ed. (p. 24), by Barbara Clark. Copyright © 1983 Merrill Publishing Company, Columbus, Ohio. Reprinted with permission.

> Instead of thinking that the left hemisphere is specialized for language, it may, more accurately, be specialized for symbolic representation. The right hemisphere, by contrast, seems to deal with representations that mirror reality more directly, those large chunks of experience that don't employ language. One example of right-brain specialization is the ability to distinguish one person from another. . . .
>
> Division of the hemispheres into "symbolic-conceptual" (left hemisphere) vs. "nonsymbolic directly perceived" (right hemisphere) avoids many oversimplifications. For instance, it is not totally true that the right hemisphere is completely devoid of language ability. . . . (U, pp. 251–52)

While it is important that educators realize the different strengths of the two hemispheres and the varieties of attributes within an individual, it is also important not to overemphasize the separate functions of the two hemispheres. To function to capacity, the brain must be viewed as an integrated whole, not as a series of isolated parts. The specialization of control, for example, is not absolute since it appears that the entire brain is capable of taking on a variety of functions. As Restak states,

> Performance is not confined to any specific portion of the brain but is "spread out." The brain is thus highly localized yet exhibits confounding "nonspecificity." Brain researchers still have not resolved this conundrum, and perhaps never will. (V, p. 104)

INDICATORS OF GIFTEDNESS

Gifted and talented individuals are many times stereotyped as being emotionally tense, high-strung, uncoordinated, and bookish. This description as misfits has been disproved repeatedly by educators and researchers who have found that often the gifted are the social as well as the intellectual leaders. As Gallagher states, the gifted are "almost invariably more popular and more socially accepted than children at other levels of intellectual ability" (5).* In many situations the gifted individual may be the class leader rather than the class oddity—depending, of course, on the specific school and the values of teachers and students,

*Numbers in parentheses appearing in this section refer to References: Characteristics, beginning on page 44.

and whether the particular type of ability is held in high esteem. The degree of ability may also affect the leadership role. Einstein and Churchill were hardly class presidents.

The "class leader" in Edward's class is, in fact, gifted both intellectually and in sports. However, he is not so far ahead of his classmates academically as Edward is, and this may make a difference in terms of general social leadership. Edward, a third grader, seems to be better accepted in his fifth grade arithmetic class than by his third grade peers.

Several lists of characteristics of gifted individuals have been disseminated throughout the country. See Supplementary Materials (pp. 79–152). Regardless of list selected, it should be remembered that the behaviors cited merely give tentative, general characteristics. Particular gifted individuals may not possess all the characteristics and may indeed act in a way to conceal these traits, especially as they progress through school. If the school allows and encourages individuals to exhibit their natural traits, however, certain characteristics will become more evident.

Typical of such lists of characteristics reflecting gifted ability is the following:

A gifted individual—

1. is curious.
2. is persistent in pursuit of interests and questions.
3. is perceptive of the environment.
4. is critical of self and others.
5. has a highly developed sense of humor, often a verbal orientation.
6. is sensitive to injustices on personal and worldwide levels.
7. is a leader in various areas.
8. is not willing to accept superficial statements, responses, or evaluations.
9. understands general principles easily.
10. often responds to the environment through media and means other than print and writing.
11. sees relationships among seemingly diverse ideas.
12. generates many ideas for a specific stimulus.

The foregoing characteristics may be grouped into three areas: personal (1–3), interpersonal (4–7), and processing of information (8–12). Another perspective is suggested by Donald Nasca, State University of New York, College at Brockport, who has described gifted learners using computer terminology:

> If you take a look at the number of descriptors that we can put together on giftedness, they comprise three different categories. First of all, is sensory input. Gifted students are capable of receiving more information from their environment. Secondly, is storage capacity. They are able to store more information. Third, is processing of information. Gifted students seem to be able to call upon a greater variety of techniques to process information that they have available. The gifted are producers of information whereas their age-mates tend to be accumulators of information and recallers of information. (25)

Although these lists describe behaviors that the gifted may exhibit in a classroom, sometimes the characteristics of gifted individuals become evident even before school age. When viewing indicative behaviors of preschool children, then, educators and parents should ask themselves if the behaviors are different from those expected of other children of the same age. Margot Parrot, a parent of three highly gifted children, shared the following characteristics and indicative behaviors of preschool gifted children from her own experiences and extensive readings as a concerned parent:

1. Early language acquisition: uses a large vocabulary; speaks in long, complex sentences; talks early and often. Many gifted children, however, do not speak early but wait until they are older and then display a remarkable facility with language.
2. Fine and gross motor skills: walks, climbs, runs early and well; controls small objects such as scissors, pencils, crayons, etc., easily; copies pictures and words; handles tools well.
3. Intellectual areas: reads signs or even books; does mathematical problems; draws associations among diverse ideas; remembers facts and events; is interested in social and moral issues; has a long attention span; asks why.
4. Social areas: has empathy for others; is self-confident and independent; organizes and leads group activities; very active both mentally and physically.

5. Creative areas: has a vivid imagination; enjoys playing with words and ideas; shows a highly developed, often verbal, sense of humor; uses objects, toys, colors in imaginative ways.
6. Specific areas: plays musical instrument; plays sports well; sings; in general, shows remarkable ability in specific areas.

According to Parrot, "In identifying by traits, it all boils down to being different, either in kind or intensity."

Readers whose initial reaction to this list is to wonder how it differs from other lists perhaps share the viewpoint favored by Halbert B. Robinson, Director of the Center for Study of Gifted Children, University of Washington, Seattle, who states: "I know of no evidence, however, that gifted children are in any meaningful way different than other children. They are precocious, we know, but precocity has more to say about their rate of development in the area of their gifts than about the qualitative path their development has taken" (18).

I've been thinking about what exactly made my children so different, from an early age. With Edward it was: *motivation* (he went from a helpless infant to a child who could crawl, sit, stand, walk holding on, and even *speak*; early *speech* (putting two words together at nine months when most babies don't even *know* two words); memory, sensitivity to environment and to other people; and *piercing questions.* Then, of course, there was his early reading (books at four and one-half) and mathematical ability (by five and one-half he had mastered all major concepts of elementary school math in his head). Chrysal was entirely different. Her motor ability and verbal ability developed earlier but over a longer period (at two and one-half to three months, Chrysal devised a means of locomotion; she would roll across the floor to get to a desired object), by two she had mastered scissors completely. At three she was writing legibly and doing art work which was identifiable. From three to five she was too ill to show her remarkable mental abilities, so I was surprised to learn how high her IQ was. She read at about four and one-half to five. Her emotional development was moderately impaired by illness—her own illness and her baby brother's. Louis' *memory* was amazing as a baby—and from the time he was an infant he seemed to be *unusually friendly and well adjusted*—which was more amazing considering the fact that he spent much of his babyhood in the hospital—often either in pain or drugged and much of his toddler-

hood in isolation to prevent infection. He is, at three, not only very *verbal and perceptive*, but also very outgoing and secure. He loves classical music and sings well. *He plays with words and ideas like toys.* His understanding of math concepts is becoming more obvious and although he has been reading some words since two, he is just starting to put together the skills to read phonically. I expect him to read at a first grade level in a few more months, at age four.

The thing that I realize upon looking back is that all three children were showing evidence of giftedness before the age of one year old and all three were branching out into areas in which they would excel by age two. By that time, strangers would make such remarks as "Isn't he the smart one," or "He seems more like three than two." I suppose I agree with Robinson that precocity is the main thing. But these kids have a way of interacting with their environment that does seem *qualitatively* different—call it deeper perception, perhaps. My kids seem to do some things that most other kids *just don't do* at any age. (This difference may be cultural, though). The difference between mental age, emotional age, and physical age (at one point Chrysal was "classified" as having a mental age of nine and one-half, emotional age of two to four, and physical age of five and one-half) seems to produce unique characteristics, besides. When a child in diapers is reading, I for one am curious about how he views the world.

(Margot Parrot)

Although the lists of characteristics of gifted and talented ability provide valuable tools for locating and identifying these individuals in schools, several cautions about their implementation are suggested. First, these lists reflect traits of gifted individuals in general. Specific lists should be developed by the teacher or school to reflect particular situations and types of giftedness. Also, because of the general nature of the lists, few, if any, individuals will possess all the characteristics. Second, the characteristics cited by these lists will be demonstrated only in environments that encourage individuals to display them. Third, while the characteristics are appropriate to the general population, individuals within subpopulations may have characteristics not included on general lists or may even possess traits that are in opposition to those usually cited.

Consequently, the search for indicators of giftedness should take into account the particular goals of the program, the type of environment needed to exhibit the characteristics, and the variety

of subpopulations from which the students will be selected. As educators survey their populations for students possessing the appropriate characteristics, they should continually draw distinctions between characteristics and resultant behaviors. Too often an individual's behavior is interpreted as a personality trait. For example, one who is critical of others' responses is sometimes viewed as "antisocial." This criticalness manifests itself in "antisocial" behavior only because the individual has not learned more appropriate outlets for the characteristic. While the characteristic may be positive, the concomitant behavior may be negative. Such behaviors, in turn, sometimes create special problems for gifted individuals.

PROBLEMS ENCOUNTERED BY THE GIFTED

Although educators usually place a high value on the characteristics cited for gifted individuals, often the behaviors indicative of these characteristics, especially in an academic setting, create difficulties for both the teacher and the gifted child.

Even with an extensive list of characteristics, it is difficult to determine giftedness in many students who have learned, consciously or subconsciously, to hide their true abilities. This statement may sound strange, but it is not when we examine the conditions under which the gifted have to function. First, their peers may place little value on intellectual giftedness. The athlete is admired and the clown is honored, but the intellectual is often ridiculed by classmates. Consider the case of the student who wrote a letter to an editor asking if it would be immoral to cheat on tests to achieve a lower score. The girl scored so well on her exams that she was affecting the curve, causing her classmates to receive lower grades. Michael Pyryt conducted a study on the perceptions of inner-city youths toward the gifted. He found that "the inner-city students saw the mathematically talented students as show-offs while the gifted students themselves and their teachers saw them as more argumentative and opinionated" (15).

Cecelia Solano noted that "students from a more middle-class school also saw the gifted as conceited and boastful" (21). As a result of peer pressure, and perhaps even teacher pressure, many gifted students become withdrawn or rebellious in the classroom,

making it even more difficult to recognize their true potential. Tara Stuart of Horizons Unlimited, in Keene, New Hampshire, relates a story that illustrates how a gifted individual may be affected by the attitude of peers and teachers.

In England several years ago I recall meeting Neil, a very sensitive and highly gifted child. The advent of kindergarten and first grade provided the trauma that changed a precocious, joyous child who read at four and played chess at five into a self-effacing, nonverbal seven year old. In attempting to reassure and help her son, Neil's mother one day talked with him about the map of the world and how explorers had traveled across thousands of miles and unknown seas and continents to discover new lands and that when they returned to their own lands, few people could understand and identify with the explorers' new knowledge of the world and all they had undergone to attain it. Then she drew a map to represent the conscious being. She carefully pointed out that in his life Neil had the capacity to explore the areas of the higher unconscious that many people only glimpsed occasionally, that he was like an explorer. He was exploring the dimensions of his inner world. The bright-eyed Neil burst out, "I wish you had told me that when I was four. I always knew I was different, but I thought I was different in a bad sort of way." (25)

To avoid creating similar feelings in other children, teachers should learn to observe students individually with the expectation that perhaps their behavior might be indicative of potential superior ability. The following discussion focuses attention on characteristics and behaviors that are accepted as potential indications of giftedness but that often create problems in an academic setting.

Divergent and Associative Thinking

This discussion of divergent and associative thinking includes not only those individuals who perceive the world in ways different from most of us, but also those who are able to draw relationships among ideas where most of us see little if any connection. Because of these unusual perceptions, many of the responses of these thinkers seem strange or even wrong to many

teachers. Consequently, while they readily acknowledge the importance of divergent and associative thinking, teachers often inhibit it in the classroom. For example, a divergent thinker will often arrive at apparently erroneous answers but, when asked to explain these answers, will sometimes demonstrate that the "wrong" answer is actually "right" when viewed from a different perspective. However, most teachers have too much content to cover, too many students, and too little time to allow such digressions from the lesson. The result of this process may be that the student accepts the teacher's opinion without question and begins to doubt his or her own thinking processes.

The associative thinker is often the person with the strange sense of humor—the person whose remarks are humorous in retrospect after the listener has an opportunity to appreciate the subtleties of the statement or comment, or the unusual associations drawn. This ability to see relationships among seemingly disparate ideas leads these individuals to paths not usually followed by peers or even by teachers. Consequently, they are perceived as different from others, usually in a negative manner. Unless they are strong individuals who receive support from other aspects of their lives, such as home, they sometimes shelter their egos by attempting to become conforming thinkers, following the same path as everyone else, withdrawing mentally from a frustrating environment and becoming the quiet student in the corner. Some may even rebel in the classroom setting and achieve the questionable status of troublemaker.

Not only are gifted individuals able to perceive a great deal of their environment and to draw from it a wide variety of associations, but they are also able to express their perceptions and understandings to others in a wide variety of ways. Most schools, however, accept only one mode of response: print. As a rule, high academic value is not placed on film, dance, art, or drama as expressions of understanding of concepts. Test-taking and essay-writing may provide teachers with the bulk of their perceptions of student ability. Students may be allowed to express ideas and feelings through another medium such as film, but ultimately they are required to respond in print in order to receive adequate evaluation and subsequent academic approval. A course that allows the use of nonprint material for evaluation would not often be considered a "solid" academic course. Gifted

students who may find other media more appropriate for presentations of their understandings are therefore penalized by the academic world.

Emily, a tenth grader who was particularly interested in mime, asked if she could do a special, self-initiated study of it as part of her work in English class. The teacher granted her request. While the rest of the class was reading *Macbeth*, Emily studied mime, not to avoid reading the play but as a positive alternative to it. After extensive reading and research, Emily went to a nearby elementary school where she taught mime to the children. The teacher gave her credit for her work, but he received considerable criticism from the rest of the faculty because Emily had not taken the test on *Macbeth*. Instead, she had performed in the elementary school, worked with the children, and documented the experience on slides and film.

Critical Perspective

Often gifted individuals are critical: of themselves and of others. Tasks and concepts come easily to young gifted individuals. Not only do they begin to rely on this ease of acquisition, but others also assume this facility in many areas. As these young students are continually rewarded for their easy successes, they begin to internalize expectations of easy and high achievement in all areas of endeavor. As they mature and progress through the grades, however, they find that success does not come quite so easily or readily in all areas. While others—teachers and parents—may understand this, the individual may find it difficult to lower the unrealistically high expectations of success. Consequently, even when others may see a successful person, he or she may see only a failure. This unrealistic self-perception may result in frustration and an unwillingness to attempt tasks and projects. Sometimes this fear of failure to live up to expectations exhibits itself at the very moment of apparent success—for example, when to the outside observer the individual who seems to be on the brink of achievement gives up or completely removes himself or herself from the situation.

During preschool and her first five years of school, Kelly was a very popular and successful student; everything seemed to come easily to her. In sixth grade, her life changed. Although she still maintained an "A" average in her subjects and had many friends, she often cried during the evening. Soon her work began to deteriorate and she began to isolate herself from her friends. After considerable discussion it was discovered that she considered herself a failure. Although everyone else believed her to be extremely successful, noting her "A" average and popularity, Kelly felt she should have an "A+" average and even more friends.

When answers to a teacher's questions are obvious, one may have little patience with erroneous answers and, sometimes, even with the question itself. Because gifted individuals are more perceptive of the answers than many of their classmates, they may be critical of others in the classroom setting, including the teacher. Since the teacher must meet all students' needs, much of the class is usually geared to a level lower than that at which the gifted individual is operating. Several frustrations may result from this situation. First, the gifted child may try to dominate the discussion. Second, frustrated in this attempt, he or she may withdraw in anger and scorn others' answers, especially if they are less perceptive than his or hers would have been. Third, the individual may attempt to explore an answer further than the teacher had intended, leading the class into realms where other students may be lost. All these reactions could create difficulties for the teacher as well as for the gifted student as others may be frustrated and angry with her/him.

Tad was a good math student. He could often envision alternatives to the teacher's methods of solving problems during class demonstrations. Sometimes Tad would express his opinion of the teacher's procedure, indicating that his was faster. The teacher, however, knew Tad was able to make intuitive leaps that other students could not make so she had to lead them through her method. But Tad's continual interruptions created a great deal of friction between them, resulting in Tad's reluctance to do any work in the math class. Tad passed the course with a C, far below his ability and so was unable to enter the honors program the next year.

Different Time/Space Perspective

Gifted individuals often have a perception of time and space that conflicts with that held by most people. A commonly stated characteristic of giftedness is the ability to accomplish tasks quickly, but this is not always true. Sometimes a gifted pupil will take longer to complete a task than other students. Partly because of the ability to see relationships and the desire to accomplish a goal well, a gifted pupil may require much more time than other students to delve into research and associated ideas, to organize the array of information and thoughts, and to compose the final draft of a presentation. This trait may lead to conflict with the schedule established for completion of assignments. Consequently, the pupil is either frustrated in the attempt to live up to individual standards or penalized for tardiness.

Jeff was a very good student but he seemed unable to submit papers on time. For example, one paper was a week late because he had to "get it right" before submitting it. When it was a week late, however, he felt he should make it better to compensate for the tardiness. Then it was two weeks late, so Jeff decided it had to be even better, making it three weeks late. Finally the teacher said that he should just turn it in as is. Jeff sensed that somehow he had to balance quality and quantity and still meet the "deadline" while remaining satisfied with the effort and the product. Because of his own high standards, the task was not a simple matter of dashing it off and handing it in, as it was for some of the other students.

In some cases, the desire to delve into a subject may make an assignment seem trivial to a gifted student who will, consequently, have difficulty completing a relatively simple task.

When given the assignment to write a 500-word theme about a novel, Carlos confided that he was having trouble because he couldn't think of anything "small" to say about the work.

Organization of material may also present problems for the gifted student in the classroom. For most of us the traditional pattern of organizing notes and references is helpful, because we may have difficulty keeping track of ideas in the absence of an observable system of organization. The gifted individual, on the other hand, often establishes a unique pattern of organization that makes sense only to that person, if it makes sense at all. To an outside observer the arrangement of materials appears as disorganization. This "creative clutter," however, is necessary for that person, as the various associations among the seemingly different items are an integral part of the organization.

Rose's desk is a mess by most standards. However, everything fits into an elaborate individual filing system; for whenever she wants a note card, book, or reference, Rose can reach into this clutter and produce it immediately. It may not fit the teacher's idea or method of organization, but it works for Rose. Whenever she is forced to "clean it up," she loses track of things for days.

In some classrooms such highly individual arrangements of materials can create problems if the gifted individual is forced to follow the same method of organization as everyone else or is marked down accordingly. Once again the assumption behind such attitudes and practices may be that someone else, "an expert," knows what is "best" for the student. The process of self-discovery that results from the individual's direct experience is denied as the acceptance of authority is reinforced. To be sure, with some gifted children the "creative clutter" is nothing more than a mess. These students can profit by examining several methods of organization and selecting or developing the one best suited to their personalities and purposes.

Variety of Valid Alternatives

Charles Pulvino of the University of Wisconsin has observed that one of the major problems confronting gifted students in high school is that of choice. For most people, the areas in which they may focus their future efforts are limited since their talents

and energies allow them to excel in only one or two fields. For gifted individuals, however, many more paths are open as the potential for superior achievement in any of them is real. While many may consider this situation a benefit, it often creates problems because of the variety of pressures to select a single path early in their career. Faced with pressures from many fronts (from society to contribute to the welfare of all, from academia to excel on a theoretical level, from parents and peers to advance financially, and from self to achieve satisfaction), gifted individuals often find themselves in a dilemma that creates severe internal conflicts.

Occasionally, when they are forced to limit their scope and live within the confines of a narrow selection of alternatives, the gifted are made to feel unacceptable as persons. This is particularly true of individuals in groups for which society holds role expectations. Gifted girls within our culture, for example, are especially susceptible to such pressure.

Maria has always had a variety of paths open to her but has faced continual internal conflicts because of these alternatives. As a young girl she was selected for a special university program for students gifted in creative writing. At fifteen she was chosen to join the opera workshop at a nearby college and consequently received a scholarship for voice. Her family felt this was not a wise decision financially, however, so Maria went to a technological institute where she excelled as an engineering student. This field was also thwarted when her counselor advised her against pursuing engineering, as the field was closed to women and there was already a surplus of engineers. From there Maria went to a state university where she majored in general education with a minor in premed. Again she excelled in several areas, especially biology and eugenics. Now, many avenues were open to her. Unable to settle on any one, she married, postponing decisions about her own career, which left her with deep feelings of lack of fulfillment. She therefore began to work in education, with special emphasis in psychotherapy. Within this general field she has moved several times. In addition, she has become particularly adept in carpentry, cabinetry, painting, ceramics, sewing, and writing. Even with the career in education guaranteed, however, Maria has felt frustration because of a belief that she is obligated to work only in education; and she has felt guilty about moving or even considering moving into other areas in which she is equally gifted.

Persistence

A major objective of most teachers is to motivate students to pursue academic goals. Usually the effort to provide motivation extends for several weeks until the unit is complete, at which time teachers move to another topic. Teachers whose classes contain gifted and talented learners might perhaps perceive the problem as how to deactivate rather than activate these students. Once a gifted individual becomes involved in a particular area, interest and singular pursuit of knowledge in that area are often long-lived. It has also been the authors' experience that once a person becomes convinced that learning is his/her own responsibility, a teacher would not dare assign the amount of work voluntarily attempted by that learner. While initially quite gratifying, such persistence may frustrate the teacher who wants the individual to stay with the class and become equally involved in other units. When teacher frustration becomes too great, the student is persuaded to abandon the topic and follow the rest of the class.

Another area in which persistence may cause problems for the gifted individual is in the daily class discussion. In most such instances, specific answers to questions are expected and a limited amount of time is available for digressions from the expected answers. Gifted individuals, however, have the ability to see beyond the superficial answers and may want to move the discussion to these other areas. Such behavior may be viewed as disruptive because it detracts from the intended line of questioning.

I stopped asking questions in my calculus class since I obviously annoyed the professor. I kept seeing new connections that he hadn't explained and didn't intend to. The nonmath lovers resented my questions, too, since they didn't want to be further confused.

Even the gifted student's direct answer may cause problems, as she/he may have a special insight or additional knowledge that produces an alternative to the answer wanted and expected. Most teachers will allow the individual to state the alternative answer,

but few will permit the persistent delving into the alternate route because class time will not accommodate such digression and few other students will be able to follow the discussion. The teacher, too, may be unable to follow the direction suggested by the digression. Such a situation may also pose a significant threat to the self-confidence of the teacher. Once again, the gifted individual is frustrated and penalized for the very characteristics that indicate exceptional ability.

Further, intellectually gifted students may be perceived as rude or obnoxious because of their persistence and tenacity—the line between persistence and insubordination being sometimes difficult to determine. It is well to keep in mind, however, that rudeness is a description of the way certain behaviors are perceived by a specific observer, which involves a value judgment about those behaviors. Such judgment often has serious implications for the relationship between the observer and the person whose behavior has been labeled rude. By examining these characteristics, it is hoped that it will be realized that actions may reflect attitudes other than the superficial ones—that obnoxious behavior, for example, may stem from a real interest in an area, not from a desire to irritate or anger.

Results

The foregoing and other problem-creating characteristics of gifted individuals may result in even more serious negative classroom behaviors, including antisocial acting out to achieve recognition, intentional failure to gain attention or to mask ability, deliberately careless or messy work, and an active distrust of teachers and other adults. This is certainly not to imply that all gifted individuals are obnoxious or that all who display unacceptable behaviors are necessarily gifted; rather, it is vital to look beyond the surface manifestations of the behavior to the underlying causes in all individuals. When this is done, the cause may be found to be a frustration of superior abilities. If the negative behaviors are prolonged, they may cause additional problems in the future. For example, lack of challenging work in early grades may give rise to a careless attitude toward work and, in time, to an inability to perform to capacity when the work becomes more challenging.

Ted is content with slightly above-average grades achieved with very little effort. Usually he begins and completes a project the night before it is due or studies for exams during the preceding class. This approach has been successful as he usually receives A's or B's for these efforts. Now, however, he is faced with more difficult classes and finds that he is unable to adapt his time to prepare adequately for tests and projects. Not only are his grades dropping drastically, but he is losing confidence in himself and becoming frustrated by the situation.

The feelings of rejection by peers and teachers sometimes create emotional problems in gifted individuals. When unable to achieve their potential in school, they may seek other outlets, some of which may be unacceptable to both school and society.

In the short story "The Substitute," Zenna Henderson (9) depicts a situation in which Keely, a disruptive student, continually antagonizes teachers and refuses to perform the tasks demanded of the class. The conflict is resolved when a substitute teacher recognizes that the gum and wires that cluttered Keely's desk were really a sophisticated radio that permitted him to converse with extraterrestrial beings.

The table that follows summarizes several characteristics of gifted students, together with the resulting difficulties and related problems that may arise in the classroom.

By focusing attention on individual behavior as a potential indication of gifted ability, teachers may be able to reexamine the rebellious student, the far-out student, the withdrawn student, the hyperactive student, and the daydreamer. Bill Romey, in *Consciousness and Creativity* (19), for example, presents an interesting discussion of the function of daydreams in the educational process. A reexamination or review may show some of these unacceptable behaviors in a different light.

Difficulties and Related Problems of the Gifted

General Characteristic	*Sample Potential Difficulty*
Curiosity	Sometimes interferes with the teacher's lesson with continual questioning; needs access to a large variety of materials.
Persistence	Focuses on areas of personal interest sometimes at the expense of work in other areas often required by the teacher; viewed as stubborn.
Perceptiveness	Exhibits sensitivity to others' verbal and nonverbal criticism and to being perceived by others as "different."
Criticalness	Shows reluctance to submit imperfect work; may not begin a project because it may not reach excessively high standards; causes antagonism of peers and teachers by negative critical reactions.
Understanding of General Principles	Neglects details once generalizations are mastered; jumps to conclusions about specifics; impatient with teacher focus on specific steps or details in a procedure; becomes frustrated by others' inability to understand general concepts as quickly; designs own procedures that may be in conflict with those taught by the teacher.
Ability to See Relationships	Provides answers that are not considered or understood by others; gives incorrect responses on multiple choice tests because several of the alternatives are equally "correct" if considered from a different perspective; becomes impatient when others do not see the relationships.
High Verbal Ability	Dominates class discussions; not always understood by peers.

DEFINITION OF GIFTED

> It is a mistake to become overly concerned with the definition of the gifted and talented until you have some idea of resources, program goals, and population with which you might work. At this point it is sufficient to establish a general definition and then refine it as the program develops.

On November 1, 1978, Congress passed a bill that, among other things, updated the definition of gifted and talented students. The revised definition stated in Public Law 95–561 reads as follows:

> For the purpose of this part, the term gifted and talented children means children and whenever applicable, youth, who are identified at the preschool, elementary, or secondary level as possessing demonstrated or potential abilities that give evidence of high performance in capability in areas such as intellectual, creative, specific academic, or leadership ability, or in the performing and visual arts, and who by reason thereof require service or activities not ordinarily provided by the school.

This definition is a revision of the one presented in the U.S. Office of Education Report of 1972, which delineated six general areas for gifted and talented abilities. The earlier report suggested that a person who possesses superior ability in any of these general categories, either singly or in any combination, should be considered gifted (2). The list offers teachers and administrators the following six areas of giftedness to explore in developing a program:

> *General Intellectual Ability.* This category includes individuals who demonstrate characteristics such as intellectual curiosity, exceptional powers of observation, ability to abstract, a questioning attitude, and associative thinking skills.
>
> *Academic Talent.* This area encompasses the excellent students, those who achieve high grades, who score very well on tests, and who demonstrate high ability in academic pursuits. Of course, some of these gifted students do not perform well in school but develop their academic skills outside school. Many schools have already developed programs for the academically gifted, including honors classes and advanced placement courses.

Creative and Productive Thinking Skills. Students with these abilities are often those who come up with original and divergent ideas. In addition, they have the ability to elaborate and develop their original ideas, as well as to realize many different ways of perceiving a single thought or topic. Such students are often overlooked in classrooms where emphasis is on assimilating a quantity of information and repeating predetermined answers.

Leadership. While many educators discuss this ability, few have actually been able to describe it adequately for classroom use. On the one hand, it includes those students who emerge as social or academic leaders in a group. However, leadership should also encompass another trait: the willingness to accept responsibility for one's actions and to have a feeling of control over one's life and decisions. In most programs for gifted students we have found the second trait, personal leadership, to be the more important of the two. Leadership involves use of power, productive interaction with others, and self-control.

Visual and Performing Arts. This area relates to activities such as painting, sculpting, drawing, filmmaking, dancing, singing, playing instruments, and performing dramatically. Individuals with superior abilities in these fields seldom have the opportunity to demonstrate their giftedness in most academic classes as the behaviors that reflect such abilities are usually relegated to outside-of-class work and then encouraged only if academic requirements have been fulfilled. Some educators and programs, however, such as the Education Center for the Arts in New Haven (Connecticut) and the Houston (Texas) School for the Visual and Performing Arts, stress this area of giftedness.

Psychomotor Skills. Although this category was not specifically referred to in the 1978 definition, the earlier report recognized its importance. We also believe it is an area worthy of special mention. Besides encompassing athletic prowess, as reflected in many sports programs, it includes superior use of fine motor skills as found in exceptional woodworking, crafts, drafting, and mechanical abilities. In most schools, these abilities are usually developed under vocational education where superior performances by students in these areas are seldom acknowledged as gifted. In fact, referral to such programs is often considered a viable option for somewhat disabled learners. An exception to this practice is the woodworking program at the Hill School in Pottstown, Pennsylvania. (12)

The foregoing list gives a broad view of areas where gifted individuals may be sought out and helped to develop their abilities. It would be a mistake, however, to accept this list as the definition of gifted and talented for a particular program. Such a definition should evolve from a discussion of the goals of the

program and the characteristics of the specific population for which the program is designed.

ISSUES

Gifted vs. Talented

While the terms "gifted" and "talented" are often used to describe one area of abilities, some teachers raise the question about the distinction between giftedness and talent. Both, indeed, reflect superior abilities. However, some researchers have differentiated between these two terms. Virginia Erlich, for example, has made the following delineation:

> By giftedness we mean intellectual prowess such as is evidenced by scores on conventional intelligence tests, and which is characterized by an ability to see and group relationships, proficiency in verbal abstract thought, persistence, intellectual curiosity, versatility and adaptability, and creative thought.
>
> By talent we mean any specialized skill or ability in a particular field of endeavor, such as the creative and performing arts or sports, where the behavior involves some physical component of muscular coordination, visual acuity, manual dexterity, etc. (2)

Ann Lamkins separates the concept of gifted into three categories: gifted, talented, and potentially gifted:

> Gifted students are those who are consistently able to apply their highly developed skills and knowledge, as well as their personal characteristics, to creative problem-finding/solving in a particular area of human endeavor such as academics, the visual/performing arts, or psychomotor activities. The accomplishments of the gifted are possible because they have exceptional aptitude for achievement in one or more areas of human endeavor and are able to develop them fully because of personal characteristics. They also apply themselves to the development and completion of their creative ideas. They may be referred to as "outstanding," "exceptional," or "very creative" students, because of the quality and consistency of their performances and products.
>
> Talented students are those who consistently demonstrate high performance with fundamental skills and knowledge as well as personal characteristics. Teachers usually enjoy these students. They like school, are very cooperative, practice their lessons, and do their assignments. They can assimilate and reproduce complex ideas and concepts, but *they do not create their own.* In other words, they are

primarily consumers and transmitters of knowledge. The accomplishments of talented children are possible because they are able to apply their personal characteristics to the development of aptitudes. The *academically* talented are often referred to as "bright," "very capable," "excellent students," or "high achievers," and score at or above the 90th percentile on achievement tests in a particular area. They may or may not score exceptionally high on intelligence measures.

Students who show potential for functioning at high levels of performance in . . . fundamental skills and knowledge and . . . creative problem-finding/solving skills, but express personal growth characteristics in the school setting in negative ways, have potential which lies in the development of psychosocial factors. The school setting, including teachers' attitudes, values, and instructional methodologies, must be carefully examined and perhaps modified if this type of potentially gifted student is to be identified and programmed. (11)

Underlying these definitions and issues are several different philosophies and attitudes toward the gifted and several ways of meeting their needs. While definitions offer a great deal for discussion, educators should not accept them without first examining the school's unique situation and their own philosophies and attitudes regarding gifted education. The definition should be adopted or modified to reflect the particular environment in which the program will ultimately function.

In this work the term "gifted" is used to refer to both the gifted and the talented, if such a distinction does indeed exist. Periodically, both terms are used to reinforce the inclusion of all these individuals with superior abilities. In addition, we believe that the separation between the gifted and the nongifted is not a clearly defined line. Rather, there is a continuum of abilities and the "breakoff" point between gifted and nongifted is very nebulous—so nebulous, in fact, that many "nongifted" individuals cross into the gifted range intermittently in particular areas when their interests are sufficiently aroused.

For this reason, program developers and teachers are cautioned against too rigid a cutoff point or too narrow a definition of gifted. As the program develops and the population becomes more focused, a definition that describes the particular students for the program may be formulated. If a committee becomes too concerned with a precise definition at the outset of program development, a great deal of time may be spent on discussions

that may not have any relevance to the program once some of the realities are observed. For example, if a committee decides to define as gifted those individuals who show exceptional ability in dance and then finds very little support and few resources in the community for such activities, the definition will have to be modified anyway. In other words, developers should have a general understanding of gifted and talented, and gather information about the values and goals of the community before defining the terms. Then, as the components of the program develop, an accurate, meaningful definition may be derived.

Underachievers

The underachieving gifted child is characterized as one who possesses superior abilities yet exhibits a discrepancy in performance. Whitmore (C[1]) points out that an examination of the literature on characteristics of underachieving gifted describes symptomatic behaviors rather than causes or characteristics. Teachers often indicate that the child could certainly do better in school if he (usually "he") would just try harder. In general, teachers are frustrated by these underachievers and are unsympathetic to their situations, especially when the student is aggressive and disruptive. Indeed, many teachers become angry with the students who do not use their "god-given talents" to the best of their abilities.

Among the common characteristics of underachievers, Whitmore (C[1], p. 88) cites the following:

- 140+ IQ
- Consistently incomplete schoolwork
- Low self-esteem and unhealthy self-concept
- Inability to function constructively in groups
- Tendency to set goals and standards too high
- Inability to focus and concentrate efforts constructively
- General immaturity.

When gifted underachievers are compared with gifted achievers, one distinguishing factor stands out: self-concept (C[1]). Combs summarized his research on characteristics of underachievers into six basic areas:

1. They see themselves as less adequate;
2. They see themselves as less acceptable to others;

3. They see peers as less acceptable;
4. They see adults as less acceptable;
5. They show less freedom and adequacy of emotional expressions;
6. They show an inefficient and less effective approach to problems. (Combs 1964, as quoted in Whitmore [C¹])

These characteristics often lead to behavior patterns that create difficulties for the individual, the teachers, and other students in the class. Because of these behaviors, gifted underachievers may be not only overlooked, but they may also be treated with frustration and even anger. Whitmore notes some general behavior patterns for gifted underachievers. For example, aggressive or hostile responses include refusing to comply with rules or requests, moving about disturbing others instead of working, vying for attention in a variety of ways, and alienating peers by aggression and derogatory attitudes. Withdrawal responses include lack of significant communication with peers or teachers, daydreaming or living in a fantasy world, and an inability to work in groups (C¹, p. 89).

For those working with cases of underachieving gifted, early identification and educational intervention are critical. Underachievement must be viewed openly. Discrepancies must be examined on the basis of patterns and production in a multiplicity of areas. Alexander and Muir propose three questions to consider when underachievement is suspected:

1. Was the level of potential appropriately assessed for the learner?
2. Does the principal source of the difficulties seem to lie within the control of the school system?
3. Does the main source of the underachievement appear to exist outside the classroom? (B, pp. 51–52).

Answers to these questions will aid in clarifying a position and in providing appropriate support services for the gifted underachiever. Telling the student to "Try harder" will not solve the problem for either the teacher or the student. Programs focusing on strengthening self-concept and individual success are vital to help these individuals as soon as possible in their educational careers. (See AIP Student Achievement Form, p. 105.)

Because of their self-perceptions and school behaviors, underachieving gifted are often the most in need of special programs yet they are also often the most difficult to select. Since many identification procedures use previous success in class or successful academic behavior (e.g., "task" commitment, high grades, positive class contribution) as indicators of gifted ability, most underachievers are overlooked. Although standardized tests may highlight some of these individuals where other methods fail to do so, perhaps the most effective method is training teachers to recognize hidden abilities. A simple question such as, "Who in your class would excel if only . . .?" may at least acknowledge their potential.

Minority Gifted

Lists of characteristics of gifted and talented individuals are usually appropriate for the majority of students. Many of these behaviors, however, may not reflect giftedness in individuals who come from cultural backgrounds and environments that differ from those of the majority. An example from one group, American Indians, will illustrate this caution.

In this culture, or variety of cultures, many of the indicators of superior abilities may be in opposition to those most often found on lists of characteristics of gifted and talented—high verbal ability, impatience, and persistence in pursuit of answers. For many American Indians, such behaviors conflict with their cultural expectations and would not therefore be evidenced by gifted individuals in that population.

Tom Peacock, Director of Education for the Minnesota Chippewa Tribe, comments on the characteristics listed by E. P. Torrance (22) in relation to the Chippewa Tribe:

- *Emotional Responsiveness*— What the psychologist Alan Briskin would refer to as emotional excitability. This type of person listens intensely and has a strong empathy for others—is highly aware of the feelings, distress, and needs of others.
- *Richness of Imagery*—The Chippewa language is rich in imagery. This type of student shows strong imagery in dance, movement, in relating to experiences in oral reading, in role playing, and dramatics and drawing and other art work.
- *Responsiveness to the Concrete*—This may be an adaptive re-

sponse to poverty and discrimination. The natural response to these may be a pride in strength and distrust of schooling.

- *Enjoyment of and Ability in Creative Movement and Dance*—This type of student experiences deep enjoyment in creative movement and dance and becomes deeply absorbed in it. Such students are excellent interpreters of movement and dance. In the Indian world this is easily noticed in the dance of our talented traditional and fancy dancers.
- *Enjoyment and Ability in Visual Arts*—This student experiences real joy in drawing, painting, sculpture, or photography and becomes deeply absorbed in it. Some of these students go to the Institute for American Indian Arts if their ability is recognized and nurtured. The beauty of Indian crafts leads one to believe we have many gifted artists.
- *Ability to Improvise with Commonplace Materials and Objects*—Indian children who have grown up in poverty exhibit this trait in a sometimes humorous manner. One Tribal Chairman reflected to me how after Christmas in his school the teacher would have show and tell so the students could bring their favorite Christmas present. He said his toys were kettles and silverware, and he used raw potatoes as his toy trucks and cars. A sad case in point, but I once observed a child using a beer can as a car and making motor sounds—doing circle spins. Sometimes it is an adaptive response to not having any toys or games. Students may exhibit this behavior by making toys and games from commonplace things, using common materials for unintended uses at home and school, and using common material inventions. (13)

Barbara Clark has cited attitudes and abilities for several other minority groups in the table on pp. 40–41.

ENVIRONMENTAL CONSIDERATIONS

Although the lists of characteristics of gifted and talented ability provide valuable tools for locating and identifying these individuals in schools, several cautions about their implementation are suggested. *First*, the lists reflect several traits, and specific indicators should be developed to reflect particular situations and types of giftedness. *Second*, these characteristics will be demonstrated only in environments that encourage individuals to display them. *Third*, individuals within different populations may have characteristics that are not included on general lists or that may even be in opposition to those usually cited. Consequently, the

search for indicators of giftedness should take into account the total environment, of both giftedness and the population, before the most appropriate decision for a particular school is made. The following sections discuss the characteristics of giftedness in two groups—preschool children and gifted girls.

Preschool Children

Most gifted and talented programs on a national basis are targeted to begin in the middle elementary grades. However, as these programs have expanded to other grade levels, a need for a perspective on preschool has evolved. The simple checklist that follows on p. 42 is designed for parents and highlights characteristics representative of high-level preschool children.

As states and school systems move toward mandating programs for students at all levels, including preschool, educators will have to focus special attention on the identification procedure and the program for these children. When identifying preschool children for programs, not only should the procedure employ multiple assessment procedures, but parent information should also be a vital component of the process. The program should introduce problem-solving skills and creative exploration during the formative years to provide a strong foundation for these activities later in school. (For an extensive discussion of the developmental characteristics of the gifted, see *Growing Up Gifted* [G].)

Gifted Girls

As young children, girls tend to develop at a more rapid rate than boys. This more advanced development results in higher scores on IQ tests, earlier entrance into elementary school, and fewer dropouts than male counterparts. However, many more males than females are identified for gifted programs at the middle and high school levels. Why? In her essay *"What Happens to the Gifted Girl?"* Linda Silverman explores answers to this and other questions on this topic. According to Silverman, among the main reasons for the declining number of females in gifted programs are conformity to role expectations and a male-oriented view of giftedness. While males are taught to compete, to achieve independence, females are taught to conform.

Facilitating and Limiting Culturally Supported Attitudes and Abilities

Subculture or Ethnic Group	*Facilitating Culturally Supported Attitudes and Abilities Children Often Bring to the Learning Situation*	*Limiting Culturally Supported Attitudes and Abilities Children Often Bring to the Learning Situation*
Japanese, Chinese, and other **Asians** (Coleman et al., 1966; Kitano, 1975; Klineberg, 1944)	Ability to listen, to follow directions Attitudes favoring education Respect for teachers and others Attitude toward discipline as guidance Serious and caring attitude toward their own development Tend to test at, or above, the norm on all tests of intelligence High achievement motivation Family unity, very supportive of child's achievement	Attitudes unfavorable to participation in discussion groups Little experience with independent thinking Strong valuing of conformity, which inhibits creative activity or divergent thinking Quiet manner, which may foster unrealistic expectations and inappropriate assessments Attitude of perfectionism, making using mistakes as learning experiences quite difficult Sex role differentiation—male more desirable and dominant sex Critical self-concept
Jewish (Adler, 1964; Barbe, 1953; Brill, 1956; Garrett, 1929; Hollingworth, 1942; Stodtbeck, 1958; Sumption, 1941; Terman and Oden, 1947; Witty, 1930)	Tendency to test high on all tests of intelligence, often registering very high scores Attitudes favoring education, personal improvement Very high achievement orientation Experience with independent thinking, abstract thinking, and problem solving Confidence, good self-concept Exposure to many ideas and content areas Highly verbal Belief that the world is orderly and can be rationally controlled Expectation that each child will leave home and achieve own contributing unit	Often overly competitive Perfectionist attitude that causes tension and frustration in learning new material Pressure to achieve from family sometimes excessive, especially with males

	Preference for individual rather than family credit for achievement Trend toward equality in family structure	
Black (Barbe, 1953; Gallagher, 1975; Garrett, 1947; Jenkins, 1950; Klineberg, 1944; Lawrie, 1969; Luckey, 1925; Miles, 1954)	Experience with independent action Self-sufficiency Imagination and humor Physical action oriented Middle class blacks accept as valid the values and attitudes of dominant society's middle class.	Limited experience with varied or extended language patterns Sex role stereotyping—sexes have defined roles, twice as many girls are identified gifted as boys, more black women employed than men Lower class blacks have problems that are typical of disadvantaged populations. Such problems are not a result of enculturation.
Mexican-American (Bernal, 1973; Aragon and Marquez, 1975)	Attitudes of cooperation Attitudes favoring education through high school Supportive family, community Affectionate, demonstrative parental relationship Unusual maturity and responsibility for their age Experience with giving advice and judgments in disputes, planning strategies, etc. Eagerness to try out new ideas Ability to initiate and maintain meaningful transactions with adults Facility for learning second language	Language of dominant culture often unfamiliar Attitudes depreciating education for family after high school, seen as unrealistic, especially for women Attitudes that differ on basic time, space reality; may cause misunderstandings Attitudes against competition make it difficult to succeed in some more traditional classrooms Sex role stereotyping—each sex expected to adhere to defined role Lack of experience with values of other cultures Emphasis on family over achievement and life goals of children.

SOURCE: *Growing Up Gifted: Developing the Potential of Children at Home and at School*, 2d ed., by Barbara Clark. Copyright © 1983 Merrill Publishing Company. Reprinted with permission.

A Dozen Ways They'll Tell You "I'm Gifted"*

— 1. Can your child interpret stories in his or her own words?

— 2. Can he or she predict appropriate outcomes for unfamiliar stories or new and original outcomes for familiar ones?

— 3. Does your child create rhymes which communicate his or her own thoughts or feelings?

— 4. Does Your child exhibit curiosity by frequently asking "why?" or by other types of behavior?

— 5. Does your child perform independently when given a task, often without awaiting directions?

— 6. Does your child readily adapt to new situations or procedures? Is he or she flexible and undisturbed by changes in routine?

— 7. Does your child initiate new activities, new tasks, or new ways of doing things?

— 8. Does your child seek to dominate or control an activity, even to the extent of appearing critical of the efforts of others or being impatient with them?

— 9. Does your child explore new ideas or invent new ways of saying things?

—10. Does your child offer suggestions for problems that come up in the home or classroom or provide alternatives to parent- or teacher-made solutions?

—11. Is your child a keen observer, often seeing more than others? Does he or she add details or provide further pertinent information when presented with an opportunity to do so?

—12. Does your child look for and find similarities and differences in people, events, places, and things?

The above checklist can help you determine whether your preschooler is gifted. Keep in mind, though, that most children—even the gifted ones—will *not* show all of these characteristics. But if your youngster displays several, he or she has exceptional abilities which should be encouraged and developed further.

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*From "Reach Gifted Preschoolers Early." Reproduced, with permission, from *GIFTED CHILDREN MONTHLY*, P.O. Box 115, Sewell, NJ 08080, © February 1986.

> Conformity is prized and heavily reinforced by parents, teachers, friends, relatives, employers, and spouses. Girls are taught from the cradle, by observing their mothers and other role models, that their function is to serve others, to place the needs and desires of others above their own.... The female peer group adds to this pressure to conform by rejecting a girl who appears too smart or too successful. (O, p. 51)

While society has made an effort to modify these images, the stereotypic view of the female still remains strong. Quoting from Alice Baumgartner Papageorgiou's 1982 research survey of 2,000 third through twelfth graders on their perceptions of sex roles, Silverman presents Dr. Papageorgiou's conclusion:

> The responses from the overwhelming majority of students confirm that, as a result of sex role socialization, students see traditional sex roles as their only choice. Consequently, these students believe that their lives would change dramatically if their sex were different. The underlying themes which emerge from their descriptions of those changes highlight the damaging effects of sex role socialization. (O)

Many of the perceptions found by Papageorgiou and quoted by Silverman would, indeed, directly affect a female's participation in a gifted program, especially as the female approaches adolescence when peer pressures are strongest. Some of these perceptions or effects of sex role socialization are as follows:

> *Effect #1.* Females learn that it is best not to work outside the home, but if one does, one should choose from a limited number of career options....
>
> *Effect #2.* Females are taught to select careers which are less rewarding than those which males are taught to select....
>
> *Effect #5.* Males are taught to be independent, competitive, aggressive, and to use violence....
>
> *Effect #6.* Females are taught to be dependent, compliant, and fearful....
>
> *Effect #7.* Males are taught to expect freedom; females are taught to expect restrictions....
>
> *Effect #11.* Females receive better treatment from teachers, but males get more encouragement to achieve....
>
> *Effect #12.* Both males and females are taught that being male is inherently better than being female.... (O, pp. 65-67)

Females who have been identified as gifted achievers tend to display many of the traits often viewed as "masculine." They are independent, achievement-oriented, rebellious of sex-role stereotyping, and prefer those professions that tend to be male-dominated. In short, they have not accepted the sex role usually assigned to females, but rather have combined "the characteristics, values, attitudes, feelings, goals, and expectations of both sexes" (O, p. 72).

The masculine view of giftedness, according to Silverman, stresses the concept of potential for high achievement, while a more female-oriented view would stress developmental advancement: "The masculine view places heavy weight on future achievements and productivity; the female view is primarily concerned with the impact of developmental differences on a child's immediate needs" (O, p. 57). With this difference in mind, Silverman defines giftedness as follows:

> The gifted child is . . . developmentally advanced in one or more areas, and is therefore in need of differentiated programming in order to develop at his or her own accelerated pace. (O, p. 58)

Not only does this definition provide for the developmental advancement of the gifted female, it also focuses attention on the need to provide a meaningful educational experience for students based on their developmental needs regardless of their current productivity. Often certain students may not display high motivation or productivity because of the current educational environment. Placed in a more appropriate environment with instruction geared to their level, the same individuals may very well demonstrate such behaviors.

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IDENTIFICATION

IDENTIFICATION

> How do you know what someone is really like? If the person comes to trust you, to believe you can be of help, he/she may choose to share his/her real interests, feelings, beliefs, and knowledge with you. If the person fears that you do not have his/her best interests at heart, he/she may withdraw or even come to display opposite characteristics as a way of self-protection. Our constant search for "more objective measures," which seems to be based upon the assumption that we can, in fact, obtain precise and analytical measurements of creativity, may very well be moving in the opposite direction from establishing a relationship of trust.

In *Creative Life*, Clark E. Moustakas, a professor at the Merrill-Palmer Institute of Human Development and Family Life, observes that

> Three methods or attitudes of modern living contribute to the deterioration of uniqueness and individuality and the development of mass behavior and mass identity: *analysis*, *diagnosis*, and *evaluation*. . . . A science that objectifies, evaluates, and puts people in categories eliminates the real persons. It sets up impersonal and unalterable standards and categories based on fragmented views of behavior. (11, pp. 107, 109)*

As educators approach the process of choosing identification procedures, it would be well to keep in mind that the further removed they are from the person, the greater the danger that what they identify may bear a closer resemblance to the mounted insect than to the living butterfly.

Before the 1950s most educators and school systems tended to follow Louis Terman's example and based most decisions about gifted individuals on IQ and scholastic achievement scores. Standardized group intelligence tests, such as the California Tests of Mental Maturity, were often used to determine IQ. In these tests

*Numbers in parentheses appearing in this section refer to the References: Identification, beginning on page 77.

educators were looking for exceptional ability in verbal or performance IQ or a combination of the two (8). For final identification, individual IQ tests such as the Wechsler scales (WISC) and the Stanford Binet were used. Most considered an IQ of 130 or above to fall in the gifted range.

With the greater emphasis on intellectual superiority at the end of the fifties and early sixties, some educators and researchers turned their attention away from IQ and achievement scores to other areas of giftedness. J. P. Guilford, with his analysis of the human intellect and resultant Structure of the Intellect model, provided a theoretical basis for examining other facets of the individual apart from IQ (5). This work was highly significant as it provided both the framework and the impetus for more research into areas of intelligence other than those measured by the IQ tests. Other researchers such as Getzels and Jackson, E. Paul Torrance, Joe Khatena, and Wallach and Kogan helped create and evaluate creativity tests and methods of bringing out creativity in students. As reported by Khatena (9), E. Paul Torrance has derived several areas of creative thinking ability, among which are fluency—the ability to produce many ideas; flexibility—the ability to produce different kinds of ideas; originality—the ability to produce unusual ideas; elaboration—the ability to add details to an idea; synthesis—the ability to combine two or more figures into a related whole; and closure—the ability to delay completion of a task to allow for the mental leaps that make possible the creation of original ideas.

Furthermore, the humanistic feelings of the sixties prompted many to look for more equitable ways to identify gifted individuals from different cultures and those with language difficulties. These attempts resulted in the creation of instruments that do not assume that all share common cultural and language backgrounds. Researchers at that time also attempted to identify the gifted and talented through the use of biographical inventories, behavioral checklists and ratings, and parent nominations.

Although researchers have long considered these other identification procedures to be important, until recently most school systems have relied primarily on standardized tests and teacher nominations. With the rapid growth of interest in services for the mentally and physically handicapped during the sixties and early seventies, however, many schools shelved all identification proce-

dures for the gifted. In 1972 the U.S. Office of Education Report showed a renewed federal interest in the gifted that began to have its effect on schools throughout the country (2). This time many schools attempted to examine several areas of giftedness. Consequently, educators have begun to look for a variety of identification instruments that can help them locate a wide range of gifted and talented individuals.

When procedures for selecting students for a program are considered, the decision should be made as to whether the approach will be "exclusive" or "inclusive." An "exclusive" stand focuses screening efforts on ensuring that no students without gifted ability will be admitted to the program. The admission requirements will be exceptionally stringent, accepting only a small percentage quota, such as the top two percent. This means, however, that although the students in the program will probably be of superior ability, many other students who are equally gifted but who, for several reasons, did not perform well on the screening instruments will be overlooked. An "inclusive" attitude toward screening, on the other hand, uses a wide variety of instruments and procedures with more flexible admission scores. While this approach provides for selecting the names of the gifted students, some students who may not possess superior ability but who perform well on the screening instruments will also be admitted.

A program in rural Maine uses six ways of nominating gifted and talented students: parent nomination, questionnaires, teacher nomination, self-nomination, the top ten percent of a group IQ test, and the top ten percent of grades. Students identified by three of the six methods are automatically included, and those identified by one or two are considered on a case study basis. A conscious decision to be inclusive was made at the start of the program.

The decision to be exclusive or inclusive should be a conscious one because, ultimately, it will affect the program and curriculum. The exclusive attitude enables the teacher to construct activities aimed solely at students with superior abilities. A program of rapid acceleration exemplifies this approach. The inclusive attitude, however, calls for a more flexible curriculum with provision for students to enter and leave without penalty.

Before beginning a program for gifted students, the program developers have to define a population that will benefit from the program. The selection of the population involves identifying those students who possess the specific characteristics necessary for success in the particular program for the gifted envisioned for the particular school within the community. If all programs, communities, resources, and students were the same, the identification process would be routine. Programs, however, differ since many of the other factors affecting the program goals—community, teachers, and resources—are unique. The uniqueness of a specific program is, of course, limited by the general definition of gifted, often provided by the state, under which the program is operating. Consequently, the identification process should involve much more than merely selecting those who score highest on a standardized test or who have the highest grades. It should also take into account the state definition, the local adaptation of that definition, and various other factors such as local needs and resources. (See pp. 68–72 for examples of different procedures to address different goals within the federal definition of gifted and talented.)

In general, the criteria for identification should not be specified until the goals of the program have been defined and the general program format has been established. Once these elements have been clarified, a screening committee can begin to examine various devices for identifying gifted characteristics in light of the goals and format of the particular program. In some instances, however, the school may discover a gifted student through a variety of methods and then design a program specifically to allow that student to develop his or her gifts. This approach is similar to the Individualized Education Program (IEP) required for the handicapped under Public Law 94–142. While the methods and procedures to be described are aimed at the former type of program development, the school should always be open to the individualized approach where programs are developed for specific individuals and their unique characteristics.

Although some general tests of mental ability are already being used in many school districts, the screening committee should initially examine many different methods equally. The committee should (1) determine which devices measure the specific characteristics required by the program; (2) decide which of these

methods would be the most feasible for the district in terms of facilities, budget, and personnel; and (3) establish an identification procedure, outlining the various steps to take to locate those students for whom the particular program is designed. (See also Ruth Martinson, *The Identification of the Gifted and Talented [10].)*

TYPES OF IDENTIFICATION INSTRUMENTS AND PROCEDURES

The discussion that follows describes various methods of screening and some of their limitations and advantages that should be taken into account.

Standardized Group Tests

Many systems use standardized group tests of IQ and achievement to select students for a gifted program because of their seeming objectivity and ease of administration. While these tests provide potentially valuable information for identifying some gifted individuals, they should not be the only instruments used to exclude students from gifted programs. As standardized group tests, they contain serious limitations that may invalidate their use as sole indicators of superior abilities. First, as group tests they have been designed for the average student. Consequently, most of the questions are far below the challenging level of the superior student; the ceilings are too low to discriminate between the bright student and the gifted student. In addition, the questions are usually aimed at lower cognitive levels such as recall and comprehension rather than at the higher ones, such as synthesis and evaluation, which are more appropriate for the gifted.

> Any instruments chosen for testing should include enough difficult items to allow for differentiation among children who are performing at the upper end of the scale. Bright children may perform like average children unless they are presented with sufficiently challenging material. (6)

Second, these tests achieve their "objectivity" by limiting responses to selection of "correct" answers chosen from various alternatives. One of the characteristics of many gifted individuals is the ability to see beyond the obvious answer and recognize situations in which a seemingly "wrong" answer may indeed be "correct." These students are often confused by the limited areas of responses granted by the group tests.

When Joseph took the IQ test, he was puzzled by several questions since many of the answers seemed correct to him and he could select only one per question. One question, for example, showed a man playing basketball and asked if this were work or play. While many students could easily respond "play," Joseph had difficulty as he realized that for a professional basketball player this was "work" rather than play.

Third, most of these tests, especially after third grade, rely heavily on the printed word and standard English. Therefore, students who have reading problems or who do not share the same cultural backgrounds as those for whom the test was designed may not perform well. Many gifted students are overlooked because they fall into either or both of these groups.

In an extensive investigation of the comparable effectiveness of several methods of identifying gifted students, Pegnato and Birch found that group IQ tests failed to identify nearly fifty percent of the students who scored above 125 on individual IQ tests (13). If the identification committee had used a score of 125 or better on a group IQ test as a basis for selecting students for a program, the committee would have missed approximately half of those who achieved that score or better on an individualized IQ test. While many gifted students would have been included in the program, nearly half of the gifted students in the school would have been excluded.

A dramatic example is provided by Keith. As a six-year-old first grade student, he scored 98 on a group IQ test, 170 on an individual test, and at ceiling on a math reasoning test.

A revealing account of the power of IQ scores in the minds of people, in spite of a specific attempt to discount their validity, may be found in "Teachers Don't Want to Be Labeled" by Harry W. Forgon (3).

Culture-Fair Tests

Many have criticized standardized tests for being culturally biased. Most such tests assume a common cultural background in terms of associations, experiences, and verbal facility with the English language as spoken by the majority of students in the United States. While any test will probably contain items with particular cultural associations or biases, many have found that individuals from minority groups with cultural backgrounds different from the majority fare better on nonverbal tests (18). Consequently, some schools with large minority populations have used culture-fair tests that rely heavily on nonverbal items rather than on verbal questions and responses. The Columbia Tests of Mental Maturity and the Raven Progressive Matrices, for example, use figures and shapes to assess reasoning abilities of students. With these tests, the individual's response is nonverbal, as are the items in the questions. Torrance has found (19) that many creativity tests because of their nonverbal nature are also indicators of gifted ability in members of minority groups. While these tests are designed as indicators of creative abilities, some are also useful in locating minority gifted in other areas as well.

Creativity Tests

If a school is planning a program to promote creativity in gifted individuals, the tests mentioned previously may perhaps be inappropriate since they fail to indicate traits commonly associated with creativity. Indeed, these tests often penalize such traits by requiring a single, correct answer. The Torrance Tests of Creative Thinking, on the other hand, stress fluency, flexibility, originality, and elaboration skills. Although some studies have found high correlations betwen the Torance Tests and IQ tests, with gifted individuals the correlations have been low, indicating that the Torrance tests may measure areas different from those measured by IQ tests (1). Several other tests have also been

developed to measure aspects of creativity; many of these are cited by Carolyn Callahan (1).

In addition to tests, however, developers may also look at examples of student creativity. This may be accomplished by having individuals perform creative tasks within their immediate environments, either school or neighborhood, or by examining student products. This personal approach may be more appropriate for students in cultures different from the majority and for programs that focus on particular kinds of creativity, such as creative writing. When evaluating these creative products, developers should be sure that the evaluator has both expertise in the specific area of creativity and familiarity with the culture that the individual represents.

Individual IQ Tests

Although they focus on general intellectual ability, only one of several areas of giftedness, individual IQ tests, such as the Stanford-Binet or the WISC-R, are usually the final screening instrument in most schools. Implicit in the use of the individual IQ test as the *final* screening instrument is the assumption that it does, in fact, identify with precision and accuracy who is and who is not "gifted." Since such tests are administered individually, the examiner can note quality of responses as well as correctness. In addition, the interview atmosphere of the testing situation also allows the examiner to make the individual feel more comfortable and less threatened.

Like the group tests, however, individual IQ tests, and even creativity tests, are only reflections of what the individual is capable of producing. All represent an attempt to quantify through paper-and-pencil efforts the potential quality of a student's ability. In order to determine an individual's ability or potential, a broader perspective should be obtained, one that views the actual works the student produces in specific areas. Some of the following procedures may allow this perspective.

Behavior Rating Scales

In an effort to focus attention on the individual student, some educators have constructed behavior rating scales or checklists of

behaviors indicative of gifted ability in specific areas. Instruments such as the "Scales for Rating the Behavioral Characteristics of Superior Students," sample items from which appear in the Supplementary Materials, list specific characteristics and illustrative behaviors of gifted individuals (17). The task of an observer using rating scales is to check the presence or absence of a particular behavior in an individual, rate the strength of the behavior, or list individuals from a group who possess the particular characteristics under consideration. While these scales do allow the observer to view the individual directly without the intermediary of a test, they also present several difficulties.

The first difficulty when using the scales is that many observers have different interpretations of the various characteristics and place different emphases on behaviors indicative of a particular characteristic. The question of emphasis causes problems with interpreting the presence or absence of a characteristic and even more with interpreting its strength.

After using a well-known rating scale for identifying gifted individuals for a particular program, the teachers found that not only had they interpreted the ratings differently, but they had even interpreted the indicative behaviors differently. They could not, for example, agree on the difference between a ranking of 2 or 4 on "persistent in reaching a goal."

A second difficulty lies in the time individual ratings require of teachers. If asked to rate each of 130 students on each of seventy-five characteristics, the teacher may resent the time and effort required to accomplish the task. This resentment may cause problems with both the rankings of the ratings of individual students and with future support of the program. One way to alleviate this potential source of difficulty would be to involve all teachers in a discussion of the identification, especially ratings of characteristics, before they are asked to perform the task. Another way to reduce the burden would be to have teachers discuss the most important characteristics and indicative behaviors and then list only those students who demonstrate these particular characteristics most frequently.

Teacher Nomination

Perhaps the most prevalent method of identifying gifted individuals is to ask for teacher recommendations. This method, however, has been shown in research studies to be ineffective. In their study, Pegnato and Birch found that junior high school teachers not only failed to nominate over fifty percent of the gifted individuals in the school (13), but they also identified many average students as gifted. Jacobs's investigation of the ability of primary teachers to correctly identify gifted students in their classes was even more dismaying. He found that they were able to identify only ten percent of the gifted individuals who were indicated through the use of an individual IQ test (7).

The failure of teachers to identify gifted individuals accurately may reflect their inability to recognize behaviors indicative of giftedness. Usually teachers tend to emphasize such behaviors as neatness, punctuality, answering correctly, and cooperation, which are not necessarily traits of gifted individuals. As discussed previously, gifted individuals often possess characteristics that are in opposition to these behaviors. The divergent or associative thinker, for example, may make leaps in logic and provide an answer far beyond the particular response sought by the teacher; but, because of considerations of time and the interest of most of the students, the teacher may be unable to pursue such an answer and may therefore regard it as incorrect. The gifted student may thus receive poor recommendations and average or even poor grades.

Teacher nomination, however, need not be inadequate. When provided with guidelines and in-service work on the characteristics and behaviors of gifted individuals, teachers become much more accurate in their perceptions (4). In-service training in the characteristics of gifted individuals is valuable not only for the identification of students for a gifted program, but also as an aid for the individual classroom teacher. An increased sensitivity to the characteristics and behaviors of gifted individuals enables the teacher to become more aware of the potential of all students.

Transcripts

Along with teacher nomination, the student's scholastic record

is often used to aid in the identification process. Grades can be as misleading as they are helpful, however. As mentioned previously, when evaluation occurs the relationship between the person making the evaluation and the person being evaluated is often crucial. Most transcripts have no way of elaborating upon relationships; they merely present a symbol that is intended to represent certain levels of competency. In addition, grades often reflect perceptions of appropriate classroom behavior rather than actual ability. In the case of the highly gifted student who is frustrated and bored, several poor or failing grades on a transcript might not be surprising to an evaluator who is familiar with negative behaviors of some gifted students.

Biographical Inventories

As part of an identification procedure, information should be gathered about the individual's interests and background outside school as well as performance within the classroom. Often gifted individuals display more of the superior abilities in extracurricular activities than they do in the classroom. Biographical and interest inventories can provide insights into these individuals that might otherwise be overlooked. Such inventories may be in the form of multiple-choice items, checklists, open-ended questions, or any combination thereof. Since a general inventory can be valuable for all teachers, the screening committee might highlight those behaviors and interests that are felt to indicate success in the particular program. "Scores" can be derived from the inventory on the basis of appropriate responses to questions concerning behaviors and interests pertinent to the program envisioned. The Institute for Behavioral Research in Creativity (IBRIC) in Salt Lake City found its own biographical inventory (see Supplementary Materials) was very effective in predicting students with high potential for academic talent, leadership ability, and artistic or musical talent (20). In some parts of the country parents may consider certain questions on biographical inventories invasions of privacy. Consequently, the items should be carefully considered for appropriateness and value to the identification process. This situation will vary according to the local conditions and program.

Parent Recommendation

In addition to his consideration of primary teachers, Jacobs also evaluated the effectiveness of parents in identifying gifted children. He found that parents were able to select sixty-one percent of the gifted children and, in addition, showed less tendency than teachers to overestimate abilities (7). This finding is not surprising, considering that parents observe children more frequently than teachers do and in more relaxed, informal situations. Often gifted individuals display their true abilities under these circumstances, while in the classroom they may tend either to conform to the rest of the class or to fall into the category of "misfit."

Obtaining information from parents sometimes presents a problem for program developers because they do not wish to give the impression that all the children will be admitted to a particular program; nor do they want to incur the frustration and wrath of those parents whose children are not selected. One way to secure the necessary information without indicating admission to a program is to gather it as part of the routine for all instruction. This can be as a checklist of activities and interests or as a multiple-choice biographical inventory. Jackson and Robinson found that while checklists and multiple choices provided valuable information, supplementary anecdotes gave necessary insights into the quality of the behaviors demonstrated by the children (6). For example, although several parents might indicate that their children read at an early age, a description of what was read, how it was read, and when it was read would be even more revealing. There is a difference between reading a picture book and reading the *Winnie the Pooh* series by age five. Such information would be valuable to all teachers and, at the same time, could be used to help select gifted individuals.

Peer Recommendation

Although not given enough importance by many, student evaluations can provide valuable insights into the abilities of their peers. Usually, the teacher's perception of student ability is limited to contact within the classroom and as an adult to a child. Student contact with classmates may allow for more

demonstration of some of the characteristics previously discussed than may be shown in the classroom setting. Leadership ability, for example, may take a different form outside class from that taken inside. Even general intellectual abilities may become more evident to classmates than to teachers since many gifted individuals are wary of demonstrating their abilities in the school setting.

In an effort to gather information about peer recommendations, one school presented each student with a list of questions such as, "Whom would you ask for help on a composition?" Students were then asked to list three individuals in the class, as it was believed that they might feel obligated to list their best friends first, regardless of ability. In reviewing the lists, the committee looked for repetition of names rather than just names of students who were listed first by peers.

RECOMMENDED PROCEDURES

Many researchers are finding that a combination of approaches appears to be the most effective method of identifying gifted and talented students. Renzulli and Smith compared a traditional approach comprised of group ability tests and individual IQ tests with a case study approach comprised of aptitude and/or achievement scores, ratings by past and/or present teachers, past performance, parent ratings, and self-ratings (16). They found the case study method is generally superior to the traditional approach in identifying gifted students, especially among minority groups. In addition, they found this approach less costly and less time-consuming than the traditional method. While many would concur that the case study approach is more effective, they would be surprised at the finding that it is also more efficient.

Jackson and Robinson provide additional guidance for identifying the gifted and talented, especially at the preschool level. First, they suggest that children be allowed several opportunities to demonstrate their intellectual and creative skills. Second, instead of taking an individual's average score across various instruments, as is often done, they suggest that the identification committee should consider the child's best performance and include him or her in the program on that basis. Third, Jackson

and Robinson found that parents' anecdotes of their children's behaviors may give more insight into early giftedness than testing situations or questionnaires and checklists. Finally, the researchers strongly recommend that any identification procedure should be "tied to the program for which the children are being identified"(6).

Pfleger, in his extensive report on the research and guidance laboratory at the University of Wisconsin, presents several premises for identification. He suggests that the identification procedure should contain a variety of techniques and should continue over a long time. He recommends that at least some of the identification techniques should be individualized, taking into account the cultural-experiential environment of the individual. Pfleger also suggests that the process requires systematic involvement of professionals who observe the individual directly and understand her/his cultural background. To examine individual performance, both self-chosen and required efforts should be assessed (14).

The identification procedure may be viewed as a two-stage process. The first stage consists of screening individuals through group tests, teacher nominations (by teachers trained in recognizing gifted individuals), peer recommendations, and other generally pertinent information geared to the specific kind of gifted program envisioned.

In the second stage, based on a student's best effort rather than an average of scores, the screening committee selects a smaller number of students for more individualized identification. Special consideration should be given those student on the fringe—those with culturally different backgrounds, language difficulties, and records of discontent. In the second screening stage, individuals should be given several opportunities to demonstrate exceptional ability in the specific areas to be developed in the program. These opportunities may include biographical inventory, interviews, parental anecdotes, and examination of such student work as papers, paintings, films, or dramatizations.

When making final decisions for the program, the committee should try to include all students who might excel in it. Several considerations may help with this determination. First, admission into the program should be based on an indication of potential and "best" performances, not on an average of test scores or

accomplishments. When teachers are asked to recommend students, they should be sure to discuss the indicative behaviors and the goals of the program. The instruments selected should have sufficiently high ceilings to allow gifted students room to excel. Many standardized tests, especially for lower grade levels, do not provide for these superior abilities. The final selection should be based on information gathered from a variety of sources that examines the characteristics pertinent to the specific program.

In addition to these concerns, there are also several political considerations that may affect the program. Early in the process, a decision should be made regarding pressure from influential parents whose children do not belong in the program. Strong administrative support either way will be required as the teacher will not have the authority to stand alone. Also, the individual's right to privacy should always be respected. No questions should violate this right even indirectly. Questions concerning income, social status, and religion do not provide vital information for identification but do intrude.

General Procedures

Basically, the most common identification procedures involve one of four general approaches: cutoff score, two-stage screening, pools, or a matrix of several scores. The cutoff score is usually a test score based on a test of general achievement or potential. For example, some school systems require a score of 130+ on a Stanford-Binet test for entrance into the gifted program. While those eligible will probably be gifted, this approach will overlook many students who are equally gifted and more in need of a specialized program since they have not been recognized. The use of a single criterion or cutoff score has been recognized as invalid not only by educators but also by some legislators. In fact, many states have regulations prohibiting the use of a single test score for the identification of gifted students.

Sometimes this approach is modified slightly by incorporating a second stage in the identification process. A cutoff score is used for the initial screening and a more detailed process is used for the final selection. In these instances the cutoff is usually lower, perhaps 115+ on a Stanford-Binet test. Once the number of

potential students has been lowered, more individualized measures may be used effectively. For example, the second stage may also include teacher nomination, parent recommendation, and/or individualized screening. The advantage of this approach is that the initial pool will include many eligible students who might otherwise have been overlooked by test measures. The more individualized nature of the second stage of this identification procedure may present opportunities for these students to stand out. The disadvantage is that the initial criterion is still often one-dimensional, overlooking many potentially eligible students.

One way to overcome this limitation is by an equal examination of pools or areas of assessment. Users of the pool approach select several areas that will reflect the desired characteristics. These may include such areas as standardized tests, teacher nomination, achievement, parent recommendation, and/or student product. The areas should represent the program goals. Then, acceptable scores are set for each area. Students are accepted into the program by qualifying in an established number of areas or pools. In addition to entrance scores, reconsideration scores should also be established. When students qualify for the latter, the areas that were found to be too low are reconsidered. The chart that follows illustrates this approach.

POOL

	Tests	Teachers	Achievement	Parents	Product	Accepted	Reconsider
J	X			X	X		X
M	X	X	X	X		X	
B		X	X				
L				X			
R	X	X	X		X	X	

Accepted: 4; Reconsider: 3; Cutoffs: Tests—90 percentile, Teachers—positive; Achievement—B+ average; Parents—positive; Product—80 percentile

According to this chart, M and R were accepted into the program. J, having scored high on tests, parent recommendation, and student product, was reconsidered by having a discussion with his teacher, who felt he did not deserve it since he had some behavior problems. After discussing the goals of the program and the kinds of activities involved, the teacher gave J a positive recommendation and he was admitted into the program. B and L were not admitted.

The advantage of the pool approach is that it considers all areas of assessment for identification simultaneously and equally. It also provides for reconsideration of borderline candidates.

The matrix approach cites the assessment areas and scores, weights them, and derives a total score for each student. A cutoff score is then set for acceptance into the program. If desired, a reconsideration score may also be set. The chart that follows illustrates the matrix for J. The numbers represent percentile ranks, which the teacher determines by ranking the students. A panel of educators reviews parent inventories to determine the ranking of students by parents.

Student: J Teacher: Ms. Z

	100-95	94-90	89-85	84-80	79-75
Tests Achievement	X				
Potential	X				
Teacher				X	
Parent	X				
Grade			X		
Peer	X				
Totals	4		1	1	
Weight	5	4	3	2	1
Scores	20	0	3	2	0

Total Score: 25 Accepted: Reconsider: X
(Accepted score: 30, Reconsider score: 25)

A major advantage of the matrix approach is the numerical documentation of the identification process. In addition, this approach can also provide for consideration of a variety of assessments simultaneously. With both the pool and the matrix, however, care must be taken to be sure that one type of assessment does not unintentionally overshadow the others and that the scores reflect the characteristics that are important for success in the program. For example, grades and teacher recommendation may reflect the same area, while tests and peer recommendation often reflect other attributes such as academic potential and leadership. If the program calls for problem-solving abilities and independent thinking, the tests used and the questions on the teacher nomination form and parent inventories should reflect behaviors that indicate these attributes.

SAMPLE IDENTIFICATION PROCEDURES

The identification procedure should reflect the particular school's definition of "gifted" and the characteristics implied in that definition. The designs that follow illustrate this. (Also see Supplementary Materials, pp. 145–52, for a chart illustrating the procedure used by the New York State Education Department to establish and implement a general identification procedure.)

The AIP Program

The Achievement of Individual Potential (AIP) program in Boston Public School District III is specifically "designed for students who demonstrate an extreme facility in areas such as acquiring knowledge, drawing associations among seemingly diverse ideas, seeking alternative solutions to problems, and criticizing answers and work they see as superficial or inadequate" (Z, p. 3). Its identification procedure was developed to select students with these characteristics. (Note: Many of the forms used in the AIP identification procedure may be found in the Supplementary Materials section, pp. 79–152.)

AIP IDENTIFICATION PROCEDURE

The following procedures and instruments have been designed to help identify and select students for the District III AIP program.

1. Identification instruments will be categorized by four pools: (a) tests, (b) teacher recommendation, (c) parent recommendation, (d) student achievement.
2. Qualifications for each pool are:
   a. Tests—90 percentile on either of two tests: Metropolitan Reading and/or Metropolitan Math. (Note: The Raven Test may be substituted for these tests in situations where a nonverbal test might be appropriate.)
   b. Teacher recommendation—cited most often on the behavior or recommended specifically by the teacher (see pp. 102–4, *AIP Teacher Recommendation Form*).
   c. Parent recommendation—majority vote by screening committee composed of parent, teacher, and administrator. Parent forms will be sent to all students who qualify in one of the other pools (see pp. 114–16, *AIP Parent Inventory Form* [modified]).
   d. Student achievement—a total score of fifteen (15) or above (see p. 105, *AIP Student Achievement Form* [modified for this text]).
3. Students who qualify in three pools will be accepted into the AIP program.
4. Students who qualify in two pools will be reconsidered by reexamining the other pools for possible modification.

The Bristol Program

The Bristol (Rhode Island) Public School System defines as gifted those students who possess above-average cognitive ability, high creativity, and high task commitment. Operationally, the school system uses Renzulli's definition of gifted (15), further defining each of his areas as follows:

Above-average ability—Demonstration of higher-level cognitive abilities in production of a product.

Creativity—Evidence of Torrance's areas of creativity for fluency, originality, flexibility, and elaboration of thought as demonstrated in the production of a product.

Task commitment—Demonstration of ability to focus on given tasks and follow through to completion.

Underlying this definition is the assumption that giftedness may be demonstrated in a variety of ways. Consequently, the identification procedure employs a multiple-criteria, three-phase design.

Phase one, nomination, incorporates a pool approach using teacher nomination, parent inventory, peer nomination, and achievement test scores. This initial step provides all students with the opportunity to be included in the screening model. To advance to the second phase of the identification, a student must qualify in at least two of the four areas.

Phase two, screening, again incorporates a pool approach. This pool, however, has only three areas: teacher rating, production of a given product, and achievement test scores.

Phase three, selection, entails the review and evaluation of student products by the selection team. This team has representation from a minimum of three of the following groups: parents, administrators, psychologists, teachers. (See pp. 73–74 for a logistics chart.) An illustration of the Bristol identification design follows.

BRISTOL SELECTION MODEL

I. Nomination Phase

Pools

Teacher Parent Peer Tests

qualify in minimum of two areas

II. Screening Phase

Teacher Product Tests

III. Selection Phase: Review of product by selection team.

The Revolving Door

Joseph Renzulli et al. have developed an extensive and inclusive identification procedure based on a definition that also allows for multiple criteria focusing on three areas: above-average ability, creativity, and task commitment. According to Renzulli, the intersection of these characteristics best illustrates giftedness.

The identification procedure for the revolving door model is designed to provide a relatively large population of students for programs that incorporate a form of the Enrichment Triad Model (see Renzulli, *Revolving Door Identification Model* (T) or Tuttle, Becker, and Sousa, *Program Design and Development for Gifted and Talented Students* (21, pp. 54–56). The procedure involves two stages: (1) the initial identification of a large group or pool of students eiligible to participate in the program (about 15–25 percent of the general population); and (2) the continual selection of a changing small group of students who actually participate in the total program (about 5 percent of the general population). The procedure itself incorporates a variety of instruments designed to identify students with strengths in the three areas described in Renzulli's definition: above-average ability, creativity, and task commitment.

IDENTIFICATION IN SPECIFIC AREAS

Not all screening instruments and methods are appropriate for every area of gifted and talented ability. Once a general procedure for selecting gifted students for a particular program has been determined, a committee may wish to focus on instruments and methods for locating students with superior abilities in specific areas. This is a vital step since it should ensure that the indentification methods chosen do help locate students with characteristics appropriate for the particular program.

The following are methods that seem most appropriate for identifying gifted and talented in the areas defined by the U.S. Office of Education. For each area, we provide a sample program goal and a discussion of instruments that could be used to identify students with characteristics that reflect the area.

Intellectual Ability

GOAL: To help students expand their intellectual abilities and interests, and their modes of responding to their environment.

Students who would excel in these programs often display some of the following characteristics: verbal sense of humor, divergent and associative thinking, ability to generalize, questioning attitude, and persistence. To locate these individuals, the following instruments and procedures would be helpful:

- *Student Interest Inventory.* Look for a wide variety of interests, some of which have been pursued in depth. Look for students who show a highly developed verbal sense of humor. Also look at the games they enjoy playing, such as chess and Mastermind.
- *Parent Nomination.* Look for items similar to those cited under interest inventory. Also look for hobbies and books read.
- *Peer Nomination.* Look for students who are sought out for answers to both academic and general problems.
- *Teacher Recommendation.* Look for students who ask a variety of questions, who tend to ask probing questions, who have strong interests, who are critical of superficial answers.
- *Biographical Inventory.* Highlight those activities and interests that demonstrate variety and some depth and persistence. Also look for behaviors that reflect a curiosity about the total environment.
- *Objective Tests.* While we have many reservations about the use of standardized tests, especially group tests (see pp. 52–54), some gifted and talented students demonstrate their abilities on individual intelligence tests. These tests, however, should be used to include rather than to exclude individuals. If students do not perform well on these tests, they may still be gifted and may show it in some of the ways just mentioned.
- *Tests of Higher-Level Thinking Skills.* See "Sources of Instruments," pp. 133–44, in Supplementary Materials.
- If there is a large group of individuals whose cultural backgrounds differ from the majority, *culture-fair* or certain *creativity tests* may be used.

Academic Talent

GOAL: To help students pursue academic interests in depth.

Students with superior academic talent usually achieve well in the academic areas, have superior reading and verbal abilities. They may be identified by using the following instruments and procedures:

- *Interest Inventory.* Look for strong interests in the academic area(s) included in the program.
- *Parent Recommendation.* Look for activities and interests that reflect ability, depth of knowledge, and interest in the subjects included in the program.
- *Transcripts.* Look for high grades in specific areas.
- *Teacher Recommendation.* Ask for recommendations from teachers of subject areas or disciplines related to the program.
- *Tests.* Achievement tests, especially in subject(s) in the program; intelligence tests; and special tests for specific subject(s) in the program may be used.

Creative and Productive Thinking

GOAL: To provide a wide range of opportunities and experiences to allow individuals to experiment, take risks, and produce creative *products.*

Students with superior creative and productive thinking abilities enjoy exploring "What if..." questions, generating a wide variety of possible answers to real and hypothetical situations, and drawing relationships among seemingly unrelated ideas. These individuals are often absorbed in the literature of science fiction. They may be identified by use of the following instruments and procedures:

- *Self-Interest Inventory.* Look for a variety of diverse interests and activities and for enjoyment in creating products and pursuing ideas.
- *Parent Recommendation.* Look for diversity of interests, sense of humor, involvement in futures studies (e.g., science fiction, environmental progress, scientific advances).
- *Teacher Recommendation.* Focus on behaviors demonstrating abilities to draw associations among seemingly diverse ideas and to generate many ideas from a specific stimulus. Also look for students who raise "What if..." questions and who

show an interest in implications of current trends for the future.

- *Biographical Inventory*. Highlight diversity of interests, variety of modes of expression other than print (e.g., film, tapes, verbal).
- *Student Products*. Look for both originality and quality.
- *Tests*. See Supplementary Materials, "In-Class Identification Strategies," pp. 124–31.

Leadership

GOAL: To help students fulfill their potential as leaders in our society.

Students with superior leadership ability are usually those whom others respect and follow. They are also the individuals who are willing to assume responsibility for a variety of tasks and to fulfill this responsibility once accepted. The following instruments and procedures are suggested to identify them:

- *Self-Interest Inventory*. Focus on areas that demonstrate a willingness to assume responsibility and a desire to complete tasks.
- *Biographical Inventory*. Take special note of activities that reflect group experiences, project work.
- *Peer Recommendation*. Look for those students others would like to assume responsibility for group tasks and those others believe will complete the task well. Also look for students others select to participate in their groups.
- *Teacher Recommendation*. Focus on students to whom other students turn for help in completing projects, including non-academic areas. These students may not be the ones teachers would necessarily select for the tasks. Also consider students who contribute productively to group efforts even when they are not leading the group.
- *Sociometric Tests*. Look for students who have influence over others in informal situations.

Visual and Performing Arts

GOAL: To provide opportunities and experiences to allow gifted

and talented students to develop their abilities in specific areas in the visual and/or performing arts (e.g., painting, sculpture, film, dance, theatre, music).

Students with superior abilities in the visual and performing arts usually pursue these interests through extracurricular school activities, community functions, and, especially, individually. Consequently, behaviors indicative of these gifted individuals may be found beyond the classroom. The following instruments and procedures are recommended to identify them:

- *Self-Interest Inventory.* Look for pursuit of interests in visual or performing arts. These activities or hobbies may include photography, folk art, painting, drawing, music, and dance.
- *Parent Recommendation.* Look for early interests and activities in visual and performing arts, including both attendance and participation.
- *Biographical Inventory.* Highlight activities and interests in the preceding areas.
- *Product.* Have experts in specific visual and performing arts areas examine an individual work or performance, looking for quality and potential.
- *Personal Interview.* Because of the intensive nature of some of the work in this area, look for students who are willing to expend the necessary time and energy. Furthermore, because some students are not aware of the variety of opportunities within this field, the interview should also involve a description of the kinds of activities they may pursue and should encourage questions about the program.
- *Peer Recommendation.* Look for individuals who pursue activities in or related to visual or performing arts. Gifted students will often share their products with peers but not with adults. For example, look for those who draw caricatures, perform in popular bands, play instruments for friends, improvise impersonations, and so forth.
- *Tests.* Some specific areas, such as music, have tests that purport to reflect ability and potential. If these are used, they should supplement rather than supersede other sources of information.

LOGISTICS

Before the process of selecting students for a program is begun, it is important to clearly delineate the logistics. This delineation should indicate the steps to be taken, the time line for the tasks, and the individuals responsible for each task. Such an outline should not only specify the tasks and assign responsibility, but it should also give an indication of the time required for each stage of the total process. The charts that follow illustrate the logistics used to identify students for the Bristol and AIP programs.

Logistics for Bristol Program*

Nomination Phase

Needs	*By Whom*
To disseminate forms to parent, peer, and teacher populations for nomination data.	Program Coordinator
To complete forms.	Parent, peer, teacher
To review achievement measures in total reading and total math and to identify students possessing a combined stanine of minimally 16.	Program Coordinator
To collect and collate data identifying students who qualify for inclusion in the screening phase.	Program Coordinator

*Bristol (Rhode Island) Public Schools.

Screening Phase

Needs	*By Whom*
To formulate a committee to assess student products composed of representation from a minimum of three of the following groups: psychologist, teacher, coordinator, administrator, parent.	Program Coordinator
To assess student products.	Screening Committee
To compile and correlate all materials.	Program Coordinator
To inform students, parents, teachers, and administrators regarding placement.	Program Coordinator
To inform all parents of the dispositions.	Program Coordinator

Selection Phase

Needs	*By Whom*
To disseminate teacher rating scales.	Program Coordinator
To complete a Teacher Rating Form.	Teachers
To collect, score, and collate teacher input.	Program Coordinator
To conduct screening activities.	Program Coordinator
To assess student measurements on standardized instruments in total reading and total math.	Program Coordinator

Logistics for AIP Program

TASK	*WHEN*	*RESPONSIBILITY*
1. Discuss identification procedure with fifth grade teachers.	April 2	Technical Assistant
2. Distribute *Teacher Recommendation and Student Achievement forms.*	April 2	Technical Assistant
3. Collect above forms.	April 16	Elementary school principals and send to Tuttle at District Office
4. List students who qualify in above pools.	April 21	Selection Committee
5. Administer Metropolitan Achievement Test.	(last year)	Guidance
6. List students who score at or above the 90th percentile.	May 4	Selection Committee
7. Disseminate *Parent Inventory* forms to parents of students who qualify in one pool.	May 4	Elementary school principals
8. Collect *Parent Inventories.*	May 15	Elementary school principals and send to Tuttle at District Office
9. List students who qualify in Parent Pool.	May 19	Selection Committee
10. List students who qualify for AIP program.	May 19	Selection Committee
11. List students who should be reconsidered.	May 19	Selection Committee
12. Reconsider appropriate students.	May 21	

*Achievement of Individual Potential Program, Boston Public School District III.

CONCLUDING COMMENT

Some years ago a topic appearing on the Writing Sample Test in English stated, "The degree of health of a society can be measured by the extent to which it tolerates diversity." Perhaps as we consider the gifted and highly gifted in our society we would do well to remember this statement but substitute the word "encourages" or "rewards" in place of "tolerates." Kurt Vonnegut poses an interesting alternative in his short story "Harrison Bergeron" (22) when he asks what the world would be like if everyone were forced to be equal in every way.

Throughout this text we have suggested that in order to be able to focus upon the gifts and strengths of each individual, a wide range of identification instruments must be used. As a teacher, as a school, as a society, can we dare to cultivate uniqueness? Can we risk being organic gardeners in our classrooms rather than computer programmers, machinists, or production managers? When we have an educational system based upon an industrial model whose stated purpose is to ensure an "efficient" operation that results in a uniform product, how can we, as teachers, find ways to remind ourselves that diversity and uniqueness are also values worth working to protect and enhance?

If we can begin to think of ourselves as gardeners, as shapers of environments rather than makers of people, perhaps we can allow each separate seed to grow and develop and even flower without demanding that all the seeds do everything at the same time and in the same order. Perhaps, as we grow in our own self-understanding and self-confidence, we can begin to perceive that each seed *is* different and we can seek to enable each to become what it is and not try to force it to become something else. Perhaps we can even come to trust that the seed of strength and creativity, the source of life and health and flowering, does indeed lie deep within each person, and by so trusting we will help provide the nurturing that will call forth the seed. Who knows, in time (its own time, not necessarily ours) it may push itself upward, come into its own, and bear much fruit. What greater joy can a gardener have than to witness the variety and splendor of the living plants that responded to such careful attention?

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SUPPLEMENTARY MATERIALS

SUPPLEMENTARY MATERIALS

LIST OF CHARACTERISTICS

The following lists of characteristics of gifted and talented individuals have been compiled by different educators and associations. These lists are representative of many that are available from associations for educating the gifted and talented, from educators in the field of teaching the gifted and talented, and from school systems that have developed programs for the gifted and talented. They are not necessarily the best descriptions, but they touch upon a wide variety of characteristics that are usually associated with gifted and talented individuals. While the lists provide some general indications of potential ability, the ultimate focus, however, should be on the individual student.

These lists may be used in at least two ways: (1) to describe general characteristics that can be applied to particular situations, or (2) to expand perceptions of characteristics of gifted and talented students after carefully looking at specific students in a particular school.

CHARACTERISTICS OF CREATIVE-GIFTED CHILDREN*

THEY—

1. Are curious.
2. Have a large vocabulary
3. Have long memories.
4. Sometimes learn to read alone.
5. Have a keen sense of time, keep track of the date.
6. Are persistent.
7. Like to collect things.
8. Are independent.
9. Are healthy and well coordinated, but some may be delicate.
10. May be bigger and stronger than average.
11. Sustain interest in one or more fields over the years.
12. Initiate their own activities.
13. Develop earlier, sitting up, walking, talking.
14. Learn easily.
15. Have a keen sense of humor.
16. Enjoy complicated games.
17. Are creative and imaginative.
18. Are interested and concerned about world problems.
19. Analyze themselves, are often self-critical.
20. Like older children when very young.
21. Are original.
22. Set high goals and ideals.
23. Are leaders.
24. Have talent(s) in art, music, writing, drama, dance.
25. Use scientific methods of research.
26. See relationships and draw sound generalizations.
27. Produce work which is fresh, vital, and unique.
28. Create new ideas, substances, and processes.
29. Invent and build new mechanical devices.
30. Often run counter to tradition.
31. Continually question the status quo.
32. Do the unexpected.
33. Apply learning from one situation to different ones.
34. Problem solve on a superior level, divergently, innovatively.
35. May appear different.
36. Enjoy reading, especially biography and autiobiography.

*By Ann Fabe Isaacs, National Association for Creative Children and Adults, 1976.

SOME GENERAL CHARACTERISTICS OF GIFTED CHILDREN*

The gifted child is likely to possess the following abilities:

1. To read earlier and with greater comprehension of nuances in the language.
2. To learn basic skills better. The gifted child usually learns them faster and needs less practice. Overlearning can lead to boredom, cessation of motivation, and the commission of careless errors.
3. To make abstractions when other children at the same age level cannot.
4. To delve into some interests beyond the usual limitations of childhood.
5. To comprehend, with almost nonverbal cues, implications which other children need to have "spelled out" for them.
6. To take direction independently at an earlier stage in life and to assume responsibility more naturally.
7. To maintain much longer concentration periods.
8. To express thoughts readily and to communicate with clarity in one or more areas of talent, whether verbal, numerical, aptitudinal or affective.
9. To read widely, quickly and intensely in one subject or in many areas.
10. To expend seemingly limitless energy.
11. To manifest creative and original verbal or motor responses.
12. To demonstrate a more complex processing of information than the average child of the same age.
13. To respond and relate well to peers, parents, teachers, and adults who likewise function easily in the higher-level thinking processes.
14. To have many projects going, particularly at home, so that the talented child is either busily occupied or looking for something to do.
15. To assume leadership roles because the innate sense of justice that is often noticeable in gifted children and youth gives them strength to which other young people respond.

*By Paul Plowman and others, California State Department of Education, 1971.

FIFTEEN TRAITS OF CREATIVE THINKERS*

1. Love of creativity, and commitment to projects they are working on.
2. The belief that they are creative.
3. A keen sense of observation.
4. A dissatisfaction with the way things are, but with a desire to improve them.
5. Ideas galore, with the ability to both create voluminous ideas and to shift from one kind of idea to another.
6. Curiosity: a hunger for new information.
7. Originality: they want to fill their lives with unique experiences.
8. Persistence: a relentless pursuit of the answer.
9. Super memory.
10. Creative imagery (such as imaging or daydreaming).
11. Analysis (the ability to mentally take things apart) and synthesis (the ability to put a variety of parts together to make something new).
12. Ambiguity: the tolerance of uncertainty.
13. The ability to work alone, and a need for solitude.
14. Compulsion: a need to put an idea into effect.
15. Multiple talents and many interests.

*From *The Gifted Kid's Guide to Creative Thinking* by Charles Wetherall (Minneapolis: Charles Wetherall Press, 1984), pp. 37-54.

BEHAVIORS IN SIX TALENT AREAS*

Convergent Thinking and Behavior

Usually responds more quickly and appropriately to questions than others his/her age.
Usually responds more quickly and appropriately than peers in new situations.
Asks questions relative to the topic or subject under discussion.
Usually selects the best course of action, the preferred outcome, or the most accurate response given several alternatives.
Sometimes redefines a problem, a situation, or a statement made by someone else.
Sometimes determines what should be done having previously learned the appropriate procedure for achievement of a goal or task.
After considering a problem sometimes organizes activities to solve the problem.
Has on occasion given directions to others and has also written or told the procedures for performing a task.
Demonstrates through discussion, or in writing, an understanding of limitations or constraints that relate to a given problem or situation.
Has on occasion appropriately explained the reasons for making a given choice or acting a certain way.

Divergent/Creative Thinking and Behavior

Generates many ideas.
Plays with ideas and is willing to go beyond the usual or known.
Often establishes new relationships between previously unrelated objects or ideas.
Is not easily discouraged by setbacks, but will adapt and continue working on a task.
Demonstrates the ability to express ideas through many forms of communication (e.g., speaking, writing, drawing, and acting).
Understands and appreciates the humor of others and displays a sense of humor.
Often initiates learning activities (a self-starter).
Often supports an opinion or solution contrary to that selected by others (parents, teachers, peers) and ably defends his/her position.
Often values the processes of discovery and creation as much as the end product.
Relies on self-evaluation and self-support as well as evaluation and support from others.

*From "Talent Category Explanation Sheet" by Robert A. Male, Associate Director, GIFTS (Guidance Institute for Talented Students), University of Wisconsin-Madison, 1979.

Goal-Related Thinking and Behavior

Plans ahead by having on hand materials needed to undertake specific activities.
Has demonstrated that he/she can state what needs to be done first, second, and so on when undertaking an activity or project.
Has demonstrated the ability to define the final goal or outcome of an activity or project.
Has stated a planned course of action and acted according to the plan.
Demonstrates his/her consideration of one's abilities, time, and personal limitations when making plans.
Has identified and stated personal qualities and talents which represent strengths and limitations relative to a specific activity.
Has, when acting according to a plan, adapted it and his/her behaviors to meet changing conditions.
Has on occasion identified and stated possible contributions of others in a proposed group activity.
Has demonstrated the ability to state and define his/her own goals and priorities and to understand the goals and priorities of others even when not the same as his/her own.
Has shown that he/she can evaluate the results of following a plan by the contributions of others as well as his/her own, and the value of the plan itself.

Social Skills and Behavior

Often relates well with older children and adults.
Acknowledges the rights of others.
Values the ideas of teachers or parents.
Values the ideas of peers.
Likes to share experiences with peers.
Understands peers' humor and displays his/her own sense of humor.
Humor is understood by peers.
Ideas are respected by peers.
Demonstrates independent action which is accepted and understood by peers.
Is looked to by others for leadership.

Physical Skills and Behavior

Learns a physical skill more quickly and correctly than peers.
Is able to integrate newly learned physical skills into his/her repertoire more easily and quickly than peers.
Accurately identifies his/her physical abilities and limitations.
Physically adapts more easily than his/her peers to unanticipated cir-

cumstances or events.
Often experiments with previously learned physical skills in order to expand upon them.
Is not easily discouraged by setbacks but will adapt and continue working on physical tasks.
Accurately describes and assesses his/her own physical accomplishments and the accomplishments of others.
Has successfully taught others how to perform physical activities.
Evaluates his/her performance against an internal standard of excellence as well as established external criteria.
Demonstrates justifiable confidence in his/her physical abilities and is recognized by others as possessing superior physical abilities.

Affective Thinking and Behavior

Has shown more interest than peers in understanding self.
Has shown more of an interest than peers in understanding the attitudes and feelings of others.
Has shown more interest than peers in understanding social issues.
Communicates thoughts and feelings more easily than peers.
Recognizes and discusses more effectively than peers the similarities and differences between his/her perceptions and those of others.
Has identified certain social and interpersonal issues as important to himself/herself.
Sometimes discusses social issues with informed others.
Understands the values underlying the social issues which interest him/her.
Demonstrates a consistency in social behaviors and attitude which reflects an internalized value system.
Has modified his/her value system or philosophy based on learning.

SAMPLE IDENTIFICATION INSTRUMENTS AND MATERIALS

Although we are aware of a wide range of programs and identification procedures for gifted individuals, we, of course, do not know every one. Consequently, we have selected a few samples from those with which we are most familiar as representative of different approaches and different program goals. These approaches include a summer program for creative individuals, a full-time program for intellectually academic gifted, and a pullout, enrichment program for intellectually creative gifted.

The instruments and materials given here have been selected (1) to provide the reader with examples of forms other school systems have developed and used, and (2) to illustrate a *variety of approaches* for identification of students. Consequently, it behooves the reader to examine all the forms for process if not content, regardless of indicated grade levels.

Performance Lists

The following checklists of behaviors of gifted individuals have been developed to help in identifying students for special programs.

Sample Items from the *Scales for Rating the Behavioral Characteristics of Superior Students**

Part I: Learning Characteristics

- Has unusually advanced vocabulary for age or grade level; uses terms in a meaningful way; has verbal behavior characterized by "richness" of expression, elaboration, and fluency.
- Possesses a large storehouse of information about a variety of topics (beyond the usual interests of youngsters his age).
- Has quick mastery and recall of factual information.

Part II: Motivational Characteristics

- Becomes absorbed and truly involved in certain topics or problems; is persistent in seeking task completion. (It is sometimes difficult to get him to move on to another topic.)
- Is easily bored with routine tasks.
- Needs little external motivation to follow through in work that initially excites him.

Part III: Creativity Characteristics

- Displays a great deal of curiosity about many things; is constantly asking questions about anything and everything.
- Generates a large number of ideas or solutions to problems and questions; often offers unusual ("way out"), unique, clever responses.
- Is uninhibited in expressions of opinion; is sometimes radical and spirited in disagreement; is tenacious.

Part IV: Leadership Characteristics

- Carries responsibility well; can be counted on to do what he has promised and usually does it well.
- Is self-confident with children his own age as well as adults; seems comfortable when asked to show his work to the class.
- Seems to be well liked by his classmates.

Part V: Artistic Characteristics

- Likes to participate in art activities; is eager to visually express ideas. Incorporates a large number of elements into art work; varies the subject and content of art work.
- Arrives at unique, unconventional solutions to artistic problems as opposed to traditional, conventional ones.

Part VI: Musical Characteristics

- Shows a sustained interest in music—seeks out opportunities to hear and create music.
- Perceives fine differences in musical tone (pitch, loudness, timbre, duration).
- Easily remembers melodies and can produce them accurately.

Part VII: Dramatics Characteristics

- Volunteers to participate in classroom plays or skits.
- Easily tells a story or gives an account of some experience.
- Effectively uses gestures and facial expressions to communicate feelings.

Part VIII: Communication Characteristics—Precision

- Speaks and writes directly and to the point.
- Modifies and adjusts expression of ideas for maximum reception.
- Is able to revise and edit in a way which is concise, yet retains essential ideas.

Part IX: Communication Characteristics—Expressiveness

- Uses voice expressively to convey or enhance meaning.
- Conveys information nonverbally through gestures, facial expressions, and "body language."
- Is an interesting storyteller.

Part X: Planning Characteristics

- Determines what information or resources are necessary for accomplishing a task.
- Grasps the relationship of individual steps to the whole process.
- Allows time to execute all steps involved in a process.

* From **A Guidebook for Developing Individualized Educational Programs for Gifted and Talented Students**, by Joseph S. Renzulli and Linda H. Smith (Mansfield Center, Conn.: Creative Learning Press, 1979), Figure 2 (p. 7).

Teacher Checklists*

Checklist for Kindergarten Students

Student's Name _____ School _____ Date _____

DIRECTIONS: Please place an X on the line beside each question which **BEST** describes the student.

	NO	YES
A. LANGUAGE		
1. Is the pupil able to read above grade level 1.5?	____	____
2. Indicate grade level for independent reading comprehension.	_____	
3. Does the pupil understand the relationship of such words as up—down, top—bottom, big—little, far—near?	____	____
4. Does the pupil follow a three-step direction?	____	____
5. Does the pupil remain on task for a minimum of 25 minutes?	____	____
B. PSYCHOMOTOR ABILITIES		
1. Can the pupil skip, throw, and catch?	____	____
2. Does the pupil exhibit coordination by being able to bounce a ball or tie shoelaces?	____	____
3. Can the pupil reproduce a five-beat rhythm pattern?	____	____
4. Can the pupil draw a person? **Please attach example.**	____	____
5. Can the pupil complete the missing parts of an incomplete familiar picture by drawing the parts in their proper perspective?	____	____
6. Can the pupil reproduce a three-dimensional design?	____	____
7. Can the pupil hear likenesses and differences in the beginnings of words; e.g., hill-bill, feet-treat, boat-coat?	____	____
C. MATHEMATICS		
1. Can the pupil repeat five digits forward and three reversed?	____	____
2. Can the pupil join and separate a sequence of sets?	____	____
3. Can the pupil recognize and understand the value of coins (penny, nickle, dime, and quarter)?	____	____

* Checklists for Kindergarten Students, First Grade Students, and Grades 2-6 are from materials prepared for Dade County (Florida) Public Schools, James S. Miley, Coordinator for the Gifted.

	Seldom or Never	Occasionally	Frequently	Almost always
D. CREATIVITY				
1. Can the pupil interpret stories or pictures in his own words?				
2. Can the pupil predict possible outcomes for a story?				
3. Can the pupil create rhymes which communicate?				
4. Does the pupil offer solutions for problems that are discussed in the classroom?				
5. Does the pupil display curiosity by asking many questions or by other types of behavior?				
6. Does the pupil question critically?				
7. Does the pupil explore new ideas or invent new ways of saying and telling?				
E. GENERAL CHARACTERISTICS				
1. Does the pupil readily adapt to new situations; is he flexible in thought and action; and does he seem undisturbed when the normal routine is changed?				
2. Does the pupil seek new tasks and activities?				
3. Is the pupil cooperative; does he tend to avoid bickering; and is he generally easy to get along with?				
4. Does the pupil tend to dominate others and generally direct the activity in which he is involved?				
5. Does the pupil appear to be happy and well adjusted in school work, as evidenced by relaxed attitude, self-confidence, and pride in work?				

Checklist for First Grade Students

Student's Name _____ School _____ Date _____

DIRECTIONS: Please place an **X** on the line beside each question which **BEST** describes the student.

	NO	YES
1. Is the pupil able to read two years above grade?		
2. Indicate grade level for independent reading comprehension.		
3. Can the pupil recognize the number and sequence of steps in a specified direction?		
4. Can the pupil recognize the properties of right angles in a geometric figure?		
5. Can the pupil identify a three-dimensional object from a two-dimensional projection and/or a two-dimensional object from a three-dimensional projection?		
6. Does the pupil form sets and subsets?		
7. Does the pupil understand the concepts of place value?		

	Seldom or Never	Occasionally	Frequently	Almost always
8. Can the pupil create a short story for a familiar subject?	____	____	____	____
9. Can the pupil interpret stories and pictures in his own words?	____	____	____	____
10. Does the pupil display curiosity by asking questions about anything and everything?	____	____	____	____
11. Does the pupil question critically?	____	____	____	____
12. Does the pupil demonstrate flexibility in his thinking pattern and the ability to communicate this to others?	____	____	____	____
13. Does the pupil perform independently?	____	____	____	____
14. Can the pupil complete the missing parts of an incomplete familiar picture by drawing the parts in their proper perspective?	____	____	____	____
15. Does the pupil exhibit superior ability in performing in an organized physical activity and obeying the rules?	____	____	____	____
16. Does the pupil make associations between sounds and their symbols?	____	____	____	____
17. Does the pupil tend to dominate others and generally direct the activity in which he is involved?	____	____	____	____
18. Does the pupil appear to be happy and well adjusted in school work, as evidenced by relaxed attitude, self-confidence, and pride in work?	____	____	____	____
19. Does the pupil demonstrate tendencies to organize people, things, and situations?	____	____	____	____
20. Does the pupil follow through with tasks that initially he was motivated to do?	____	____	____	____
21. Does the pupil readily adapt to new situations; is he flexible in thought and action; and does he seem undisturbed when the normal routine is changed?	____	____	____	____
22. Does the pupil seek new tasks and activities?	____	____	____	____
23. Is the pupil cooperative; does he tend to avoid bickering; and is he generally easy to get along with?	____	____	____	____
24. Is the pupil self-confident with pupils his own age and/or adults; seems comfortable when asked to show his work to the class?	____	____	____	____

Checklist for Grades 2–6

RATING SCALE #1: PUPIL LEARNING CHARACTERISTICS

Student's Name _____ School _____ Date _____

DIRECTIONS: Please place an X on the line beside each question which **BEST** describes the student.

	Seldom or Never	Occasionally	Frequently	Almost always
1. Has verbal behavior characterized by "richness: of expression and elaboration."	_____	_____	_____	_____
2. Possesses a large storehouse of information about a variety of topics beyond the usual interests of youngsters his age.	_____	_____	_____	_____
3. Has rapid insight into cause-effect relationships; tries to discover the how and why of things; asks many provocative questions; wants to know what makes things or people "tick."	_____	_____	_____	_____
4. Has a ready grasp of underlying principles and can quickly make valid generalizations about events, people or things; looks for similarities and differences.	_____	_____	_____	_____
5. Is a keen and alert observer; usually "sees more" or "gets more" out of a story, film, etc., than others.	_____	_____	_____	_____
6. Reads a great deal on his own; does not avoid difficult material; may show a preference for biography, autobiography, encyclopedias, atlases, travel, folk tales, poetry, science, history, and drama.	_____	_____	_____	_____
7. Tries to understand complicated material by separating it into its respective parts; reasons things out for himself; sees logical and common sense answers.	_____	_____	_____	_____

8. Is the pupil achieving two years above grade level in reading? Grade Level _____
9. Is the pupil achieving two years above grade level in mathematics? Grade Level _____

RATING SCALE #2: PUPIL MOTIVATIONAL CHARACTERISTICS

Student's Name _____ School _____ Date _____

DIRECTIONS: Please place an X on the line beside each question which **BEST** describes the student.

	Seldom or Never	Occasionally	Frequently	Almost always
1. Becomes absorbed and truly involved in certain topics or problems; is persistent in seeking task completion—sometimes it is difficult to get him to move on to another topic.	_____	_____	_____	_____
2. Is easily bored with routine tasks.	_____	_____	_____	_____
3. Follows through with tasks that initially he was motivated to do.	_____	_____	_____	_____
4. Is self-critical; strives toward perfection.	_____	_____	_____	_____
5. Prefers to work independently; needs minimal direction from teachers.	_____	_____	_____	_____
6. Is positive and zealous in his beliefs.	_____	_____	_____	_____
7. Has tendency to organize people, things, and situations.	_____	_____	_____	_____
8. Is concerned with right and wrong, good and bad; often evaluates and passes judgment on events, people, and things.	_____	_____	_____	_____

RATING SCALE #3: CREATIVITY CHARACTERISTICS

Student's Name _____ School _____ Date _____

DIRECTIONS: Please place an X on the line beside each question which **BEST** describes the student.

	Seldom or Never	Occasionally	Frequently	Almost always
1. Displays curiosity about many things; is constantly asking questions about anything and everything.	_____	_____	_____	_____
2. Generates a large number of ideas or solutions to problems and questions; often offers unusual, "way out," unique, clever responses.	_____	_____	_____	_____
3. Is uninhibited in expressions of opinion; is sometimes radical and spirited in disagreement; is tenacious.	_____	_____	_____	_____
4. Is a high risk taker; is adventurous and speculative.	_____	_____	_____	_____

	Seldom or Never	Occasionally	Frequently	Almost always
5. Displays a good deal of intellectual playfulness; fantasizes; imagines; manipulates ideas—changes, elaborates upon them.				
6. Displays a keen sense of humor and sees humor in situations that may not appear to be humorous to others.				
7. Is unusually aware of his impulses and more open to the irrational in himself.				
8. Is sensitive to beauty; responds to aesthetic characteristics of things.				
9. Is nonconforming; is not interested in details; is individualistic; does not fear being different.				
10. Criticizes constructively; is unwilling to accept authoritarian pronouncements without critical examination.				

RATING SCALE #4: LEADERSHIP CHARACTERISTICS

Student's Name _____ School _____ Date _____

DIRECTIONS: Please place an X on the line beside each question which **BEST** describes the student.	Seldom or Never	Occasionally	Frequently	Almost always
1. Carries responsibility well; follows through with tasks and usually does them well.				
2. Is self-confident with children his own age as well as adults; seems comfortable when asked to show his work to the class.				
3. Seems to be respected by his classmates.				
4. Is cooperative with teacher and classmates; tends to avoid bickering and is generally easy to get along with.				
5. Can express himself well; has good verbal facility and is usually well understood.				
6. Adapts readily to new situations; is flexible in thought and action and does not seem disturbed when the normal routine is changed.				
7. Seems to enjoy being around other people, is sociable, and prefers not to be alone.				
8. Tends to dominate others when they are around; generally directs the activity in which he is involved.				
9. Participates in most activities connected with the school; can be depended upon to be there.				

Checklist for Middle Grades and Above*

Student's Name _____ School _____ Grade _____ Homeroom _____

Teacher's Name _____ School Term _____

To the Teachers:
We need your help. We're looking for children in your classroom who you feel might be more able than their test scores indicate. The following list of characteristics, while by no means all inclusive, represents traits found in gifted and creative children. If any student in your class is described by at least twelve (12) of the items on this list, you may want to watch him more carefully for possible inclusion in the gifted program. Those items which are **most** applicable should be double checked. Will you help us by responding to the following checklist for the top students in your class? Supporting information and comments should be written on the back of this form.

_____ 1. Is an avid reader.
_____ 2. Has received an award in science, art, literature.
_____ 3. Has avid interest in science or literature.
_____ 4. Very alert, rapid answers.
_____ 5. Is outstanding in math.
_____ 6. Has a wide range of interests.
_____ 7. Is very secure emotionally.
_____ 8. Is venturesome, anxious to do new things.
_____ 9. Tends to dominate peers or situations.
_____ 10. Readily makes money on various projects or activities—is an entrepreneur.
_____ 11. Individualistic—likes to work by self.
_____ 12. Is sensitive to feelings of others—or to situations.
_____ 13. Has confidence in self.
_____ 14. Needs little outside control—disciplines self.
_____ 15. Adept at visual art expression.
_____ 16. Resourceful—can solve problems by ingenious methods.
_____ 17. Creative in thoughts, new ideas, seeing associations, innovations, etc. (not artistically).
_____ 18. Body or facial gestures very expressive.
_____ 19. Impatient—quick to anger or anxious to complete a task.
_____ 20. Great desire to excel even to the point of cheating.
_____ 21. Colorful verbal expressions.
_____ 22. Tells very imaginative stories.
_____ 23. Frequently interrupts others when they are talking.
_____ 24. Frank in appraisal of adults.
_____ 25. Has mature sense of humor (puns, associations, etc.).
_____ 26. Is inquisitive.
_____ 27. Takes a close look at things.
_____ 28. Is eager to tell others about discoveries.
_____ 29. Can show relationships among apparently unrelated ideas.
_____ 30. Shows excitement in voice about discoveries.
_____ 31. Has a tendency to lose awareness of time.

* From San Francisco Unified School District Programs for Mentally Gifted Minors, William B. Cummings, Supervisor.

Checklist for Junior High*

Student's Name _____
Last First Initial School Date

Please check the column which best describes student.	Truly Exceptional—Highest 5%	Outstanding—Highest 5%	Excellent—Next Highest 15%	Good—Next Highest 15%	Above Average—Next 15%	Average—Middle 20%	Poor—Lowest 40%
Initiative: Carries responsibility well; follows through with tasks and usually does them well. Is positive and zealous in beliefs; is self-critical, striving to do better.							
Courage: Is a high risk taker; is adventurous and speculative.							
Self-Confidence: Is self-confident with students his own age as well as adults; seems comfortable when asked to show his work to the class.							
Curiosity: Tries to discover how and why of things; asks many provocative questions.							
Independence: A—Prefers to work independently; needs minimal direction.							
B—Generally directs the activity in which he is involved.							
Health: Good health; attendance and tardiness not a factor in grading.							
Responsibility: Can follow written and oral directions, stays on task, handles equipment.							
Flexibility: Adapts readily to new situations; is flexible in thought and action.							
Expressiveness: Can express himself well; has good verbal facility and is usually well understood; has ability to organize ideas in written form.							
Respect for Others: Is cooperative with teacher and peers; tends to avoid bickering and is generally easy to get along with.							

If you know of some particular reason why this student **should** or **should not** be in the Program, please comment on opposite side.

Teacher's Name Subject Date

* From materials prepared for Dade County (Florida) Public Schools, James S. Miley, Coordinator for the Gifted.

Checklist for Culturally Disadvantaged Underachieving Mentally Gifted Minors
(Suggested by the State Consultants in the Education of the Mentally Gifted)*

1. Early evidence of:
   - _____ School-related learning
   - _____ Maturation
   - _____ Active and persistent exploration of environment
   - _____ Imitation of adult behavior
   - _____ Questioning of established ways of doing things or of assignments and directions

2. Unusually resourceful in coping with:

   2.1 Responsibilities
   - _____ Home
   - _____ School
   - _____ Work
   - _____ Community
   - _____ Other

   2.2 Opportunities
   - _____ Access to resources
   - _____ Free and/or unstructured time
   - _____ New environments
   - _____ New experiences
   - _____ Other

   2.3 Deprivations
   - _____ Economic
   - _____ Social
   - _____ Expression, information, planning, communication, exploration
   - _____ Cultural
   - _____ Educational

   2.4 Problems, Frustrations, and Obstacles
   - _____ School
   - _____ Home
   - _____ Social
   - _____ Other

   2.5 Lack of Structure and Direction
   - _____ No closure
   - _____ Poor or irrational organization of:
     - _____ Time
     - _____ Work tasks
     - _____ Learning experiences
     - _____ Social experiences

   2.6 Overly structured settings
   - _____ With no or few opportunities to explore alternatives
   - _____ With overemphasis on rigid expectations and with rigid role performance
   - _____ With no or few opportunities to do things in new ways

3. Playful with:
   - _____ Materials
   - _____ People (interpersonal relations)
   - _____ Ideas
   - _____ Other things

4. Sense of humor (Describe)

* Obtained through Dr. Paul Plowman, California State Department of Education.

5. Products (List)

6. Achievements (List)

7. Skills (List)

8. Scores on intellectual ability tests:
   _____ Scores compared with norms for culturally disadvantaged children
   _____ Nonverbal score as compared with verbal score

9. Intelligence/achievement scattergram profiles and aptitude test scores

10. Ratings on maturation profiles; e.g., Gesell

Checklist for Able Disadvantaged Pupils*

Name _____ Date _____

School _____ Grade _____ Age _____

Able disadvantaged pupils evidence superior ability in one or more of the five areas listed below. No pupil is expected to demonstrate ability in all areas, but an analysis of strengths may indicate potential. It is important to note that these characteristics can be evidenced in both positive and negative ways and either manifestation is an indicator of strength. Examples of negative indicators have been enclosed in parenthesis.

The classroom teacher who works daily with pupils is best qualified to make these observations. Place an **X** on the line beside each statement which **BEST** describes this pupil. If the behavior has not been observed, leave the line blank.

	YES	NO
A. LEARNING		
• Demonstrates verbal proficiency in small group problem-solving tasks.	_____	_____
• Has unusually advanced vocabulary for age or grade level.	_____	_____
• Has verbal behavior characterized by "richness" of expression, imagery, elaboration, and fluency in any language. (Sometimes rambles on and on.)	_____	_____
• Possesses a large storehouse of information about a variety of topics beyond the usual interests of age peers.	_____	_____
• Has rapid insight into cause-effect relationships; tries to discover the how and why of things; asks many provocative questions; wants to know what makes things or people "tick." (Can be an annoyance in persisting to ask questions.)	_____	_____
• Has a ready grasp of underlying principles; can quickly make valid generalizations about events, people or things. (Sometimes skeptical.)	_____	_____
• Looks for similarities and differences.	_____	_____
• Reads independently; does not avoid difficult material; may show a preference for biography, autobiography, encyclopedia, atlases, travel, folk tales, poetry, science, history, and drama.	_____	_____
• Tries to understand complicated material by separating it into its respective parts; reasons things out and sees logical and common sense answers.	_____	_____
• Catches on quickly; retains and uses new ideas and information.	_____	_____
• Has a facility for learning English if bilingual.	_____	_____
• Is a keen and alert observer; usually "sees more" or "gets more" out of a story, film, etc., than others.	_____	_____
B. MOTIVATION		
• Evidences power of concentration.	_____	_____
• Prefers to work independently with minimal direction from teachers. (Resists directions.)	_____	_____
• Has tendency to organize people, things, and situations. (Resists opinions of others; wants own way.)	_____	_____
• Is concerned with right and wrong, good and bad. (Makes decisions with little tolerance for shades of "grey.")	_____	_____

* From materials prepared by Los Angeles Unified School District.

	YES	NO
• Takes advantage of opportunities to learn and enjoys challenge.	____	____
• Is self-critical and strives for perfection. (Sometimes critical of others and not self.)	____	____
• Often is self-assertive. (Can be stubbornly set in ideas.)	____	____
• Requires little drill to grasp concepts; seeks other than routine tasks. (Needs to know reasons for activity.)	____	____
• Becomes absorbed and involved in certain topics or problems.	____	____
• Is persistent in task completion. (Sometimes unwilling to change tasks.)	____	____
• Likes structure and order but not static procedures. (Is frustrated by lack of progress.)	____	____
• Is motivated by sports, music, and concrete subjects.	____	____
C. LEADERSHIP		
• Accepts and carries responsibility; follows through with tasks and usually does them well.	____	____
• Is self-confident with age peers; is usually well understood by them. (Can be self-assertive and dominant.)	____	____
• Seems well liked by classmates and is looked upon as a leader. (Needs peer approval and acceptance.)	____	____
• Shows developing understanding in how to relate to teachers and classmates. (Sometimes has a rebellious attitude.)	____	____
• Tends to dominate others and generally organizes and directs activities when involved in a group.	____	____
• Adapts readily to new situations; is flexible in thought and actions and is not disturbed when normal routine is changed.	____	____
• Seems to enjoy being with other people; is sociable and prefers not to be alone. (Sometimes is a loner.)	____	____
• Takes initiative and shows independence of action.	____	____
• Is a social leader on playground and off campus.	____	____
D. CREATIVITY		
• Displays intellectual playfulness; fantasizes; imagines; manipulates ideas by elaboration or modification.	____	____
• Is a high risk taker; is adventurous and speculative. (Has different criteria for success.)	____	____
• Displays a keen sense of humor reflective of own cultural background.	____	____
• Is individualistic; does not fear being different. (Departs from peer norm in action and behavior.)	____	____
• Predicts from present information.	____	____
• Displays a curiosity about many things; has many hobbies.	____	____
• Generates a large number of ideas or solutions to problems and questions.	____	____
• Responds emotionally to stories, events, and needs of others.	____	____
• Shows ability in oral expression.	____	____
• Demonstrates exceptional ability in written expression; creates stories, plays, etc.	____	____
• Is sensitive to color, design, arrangement and other qualities showing artistic appreciation and understanding.	____	____
• Is sensitive to melody, rhythm, form, tonal coloring, mood, and other qualities showing music appreciation.	____	____
• Demonstrates exceptional ability in one of the fine arts (underline area of strength): dancing, painting/drawing, sculpturing/clay modeling, instrumental or vocal music, role-playing/drama.	____	____

	YES	NO
• Demonstrates unusual ability in one of the practical arts (underline area of strength): handicrafts, wood, metal, print, design, mechanics.	____	____
• Demonstrates exceptional skill and ability in physical coordination activities.	____	____
• Shows interest in unconventional careers.	____	____
• Improvises with commonplace materials.	____	____
E. ADAPTABILITY		
• Handles outside responsibilities and meets school demands.	____	____
• Learns through experience and is flexible and resourceful in solving day-to-day problems.	____	____
• Deals effectively with deprivations, problems, frustrations, or obstacles caused by the complexities of living conditions.	____	____
• Overcomes lack of environmental structure and direction. (Needs emotional support and sympathetic attitude.)	____	____
• Displays high degree of social reasoning and/or behavior and shows ability to discriminate.	____	____
• Uses limited resources to make meaningful products.	____	____
• Displays maturity of judgment and reasoning beyond own age level.	____	____
• Is knowledgeable about things of which others are unaware.	____	____
• Can transfer learning from one situation to another.	____	____

AIP TEACHER RECOMMENDATION FORM*

TEACHER _____ GRADE _____

SCHOOL _____

Please list (in the space provided) students in your class who demonstrate the behavior in the extreme.

1. Uses complex vocabulary.

2. Uses words and sentences well to explain ideas.

3. Chooses poetic or artistic modes to express ideas.

4. Gives novel solutions to problems.

5. Reads unusual books.

6. Seeks a variety of different approaches to problems.

7. Explores "What if . . ." problems.

8. Generalizes ideas from specific information.

*Achievement of Individual Potential Program, Boston Public School District III.

9. Relates new ideas to previous ideas.

10. Understands information quickly.

11. Projects ideas into future implications.

12. Draws relations among many ideas.

13. Completes tasks once begun.

14. Not easily discouraged by a difficult task.

15. Wants to know about many things.

16. Works well independently.

17. Perceives similarities among different ideas.

18. Uses analogies or metaphors to explain ideas.

19. Not satisfied with superficial answers.

20. Asks many intelligent questions (some may not be on topic under discussion).

List any students you feel should be in the AIP Program. Include students who are not cited above as well as those who are.

Note: Rather than having a rating for each student, the selection team includes those students whose names appear most often.

Note: The form provides for teacher nomination beyond the form itself.

AIP STUDENT ACHIEVEMENT FORM*
Grades 6 and 7

TEACHER _____ SUBJECT _____

SCHOOL _____ GRADE _____ DATE _____

STUDENT _____

Rate the students in your class according to the criteria below. A rating of "1" is low whereas "5" is high. Potential reflects the student's ability regardless of actual performance in class. Achievement reflects the student's actual performance (for example, the grade for the course).

	LOW				HIGH	
EFFORT	1	2	3	4	5	_____
ACHIEVEMENT	1	2	3	4	5	_____
POTENTIAL	1	2	3	4	5	_____
					TOTAL	_____

NOTE: Since this program focuses on a group of students for whom the regular program is inappropriate (e.g., the underachiever), potential is an important consideration in the identification process. A score of 15 qualifies a student for inclusion in this category. A score of 14 with 5 potential qualifies a student for a reconsideration interview.

*From Achievement of Individual Potential Program, Boston Public School District III (with modifications).

Questionnaires and Inventories

The following materials have been developed to obtain information from a variety of sources, including parents, peers, and the candidate. They should, of course, be modified for each particular program and situation.

Self

Self-Portrait*

Self-expression has many forms and holds a significant place in each of our lives. We encourage you to ponder and share the exploration of yourself with us through a self-portrait. Rather than showing how you appear to others, express yourself as you feel yourself to be. Your self-portrait may be a symbol or image or any combination of line, shape, and color that stands for you.

After you have completed your self-portrait on a separate piece of paper, write a brief interpretation of it in the space below.

The "openness" of this task may lead to some valuable insights not obtainable elsewhere.

* From Horizons Unlimited, Keene State College, Keene, N. H.

Autobiographical Questionnaire*

Name _____ Student _____ Teacher _____

Address _____ Age _____

_____

Telephone _____

Please approach the following questions from an autobiographical point-of-view. Skip any questions you prefer not to answer. All questionnaires will be completely confidential.

1. What occupation do you have or do you envisage? For what reasons did you choose the work you are doing or planning?
2. Have any particular cultural works held deep meaning for you (e.g., books, films, music, theatre, painting, etc.) and how were you affected by them?
3. How would you describe the quality of your relationships with other people, including strong and weak points? How would these affect your participation in a living-learning situation with 40 other people for 4 weeks?
4. What significance and value has friendship for you?
5. What events, activities, and inner conditions have given you the most satisfaction and joy? Which have made you suffer most? Which have had most meaning and significance for you?
6. Are there any values and ideals which you hold firmly as a result of your own experience? How do you express these in your life? How do you fail to express them?
7. What is your perception of education? How do you think you learn best?
8. What is your opinion about the present epoch in human history and consciousness? In what ways do you think we are making progress or losing ground? What do you see as the major challenges facing mankind today?

These questions relate specifically to the philosophy of Horizons Unlimited. Your questions should reflect your philosophy.

* From Horizons Unlimited, Keene State College, Keene, N. H.

Biographical Inventory*

1. Academic Achievement
   How fast do you learn new material in school, compared with others your age?
   A. Much faster than most
   B. Just a little faster than most
   C. About the same as most
   D. Just a little slower than most

2. Creativity
   How often do you read an advanced text to learn more about a subject of interest to you?
   A. Not very often
   B. About once or twice a month
   C. About once a week
   D. A few times a week
   E. Once a day or more

3. Artistic Potential
   Do you like to practice to develop your talent or skill in a particular artistic or musical activity?
   A. Yes
   B. Sometimes
   C. No

4. Leadership
   How much time do you spend in organized school activities (plays, band, student government, etc.)?
   A. Most of my spare time
   B. Quite a bit
   C. Some
   D. Very little
   E. None

5. Vocational Maturity
   Do you know what kinds of education or training are necessary for certain jobs?
   A. Have not really thought about this question.
   B. I know some of the kinds of schooling or training needed.
   C. I know what kinds of education or training are needed for the jobs I'm considering.

6. Educational Orientation
   How long do you expect to go to school?
   A. Only until I can quit
   B. Until I graduate from high school
   C. Some schooling after high school
   D. Until I graduate from college
   E. Don't know

* Sample items from *Biographical Inventory: Form U*, Institute for Behavioral Resources in Creativity (IBRIC), Salt Lake City, Utah, 1976.

Parent Questionnaire*
Examiner Instructions

1. Don't tell the parent this is a questionnaire to determine if the child will be called "gifted" and put in a special program. It isn't!
2. Some parents are more verbal than others. Some parents will go to great lengths to fill out a written questionnaire, others don't like to write anything and will respond Yes, No. Write down any anecdotes the parent *tells* about the child, whether the story seems relevant or not. The more information we get, the better.

Questioner assessment: Do you think the parent gave information comfortably?

Did it seem *to you* that the parent overestimated or underestimated the child's abilities?

This questionnaire could be used by any teacher to help instruction—an important point.

Some parents fear the school setting and this should be taken into account when reading reports. Lack of response from parent does *not* indicate lack of ability.

*By Margot Nicholas Parrot for the Bucksport/Orland Gifted Task Force, June 1978.

Parent Questionnaire

We are trying to find out your child's special strengths. Please be as accurate as possible—do not overestimate or underestimate. Any personal stories that you wish to share with us will help us to better understand your child. There is a space after most questions for your remarks. If you want extra paper, or if you would rather tell a story than write it, please let the questioner know. You may also want to give the questioner a sample of your child's art work or a story he/she has made up.

Note lack of reference to special program or "gifted" ability.

Child's name:

Parent(s):

Address:

School or preschool program if any:

Child's birthdate:

What sports or dance experience has your child had, formally or informally (such as family games, swimming lessons, etc.)?

Note use of "fill-in" responses when appropriate.

How does the child compare with other children of the same age in physical activities?

At what physical activities is he/she especially good or especially slow?

Does the child have any physical handicaps that you know of or suspect?

At what age did your child learn to do these things:

	Age	Not Yet	Don't Know
Cut out pictures with scissors.			
Color within the lines.			
Tie shoes.			
Print alphabet letters.			
Print name or other words.			
Write out or copy stories/poems.			

Does your child excel at art? What kind?

Does your child play a musical instrument? What?

How often does the child use materials like clay or playdough, crayons, paper, paints, paste, etc., at home?

When did your child start doing these things:

	Age	Not Yet	Don't Know
Name alphabet letters (in books, on signs).			
Read/spell own name.			
Read individual word(s).			
Read simple books (like *Hop on Pop*).			
Read harder books (by him/herself).			
Count to 20.			
Do addition (subtraction) in head (or with objects or on fingers).			
Tell time.			
Count money.			
Remember phone number.			

Does the child understand ideas that seem too complicated for a young child? Like what?

Does he/she use big words or talk in long sentences?

Does the child have an unusually long attention span, or does he/she spend a long time doing any one activity, especially a favorite one?

Does he/she have a special sense of fairness, of justice?

Does he/she have an unusually good memory?

Are there any intellectual or school-type activities at which your child is better than most? What?

Does this child have any known or *suspected* mental or perceptual handicaps? Describe:

(Creativity)
Does the child make up stories, songs, or poems? Are they unusual?

Does the child act out stories or plays with his/her body or with puppets or toys? With other children? Describe:

Does your child come up with unusual excuses for not doing things?

Does he/she have a vivid imagination? Explain:

(Leadership)
How does the child get along with these people:

Question	Very Well	Normal—O.K.	Not Well
Kids of his/her age			
Adults			
Older children			
Younger children			
Large groups			
Small groups (2–4 kids)			

When playing games or getting into mischief, is this child often the leader?

Does he/she prefer to play alone _____, or in small groups _____, or the more the better _____?

Has he/she ever been with a group of kids regularly (like nursery school, church group, etc.)? Describe:

How did she/he like it?

(Family/general)
What are the child's favorite activities?

What are the family's favorite activities?

Every parent sees special things about his/her child that other people miss. Describe your child:

AIP PARENT INVENTORY FORM*

Dear Parent:

As part of the identification procedure for the AIP Program for gifted/talented children, we will include information about the student's work outside school. Please help us by completing the following checklist as it applies to your child. Indicate the most appropriate column beside each statement, *citing an example* whenever possible. Please return to the school office by _____. Thank you for your cooperation.

_____ _____

Student's Name Grade

	Never	Seldom	Sometimes	Often	Very often
1. Pursues an interest or hobby intensely. EXAMPLE:					
2. Works well with others. EXAMPLE:					
3. Leads other children in games or other activities. EXAMPLE:					
4. Reads on own. EXAMPLE:					
5. Talks about ideas from different sources such as books, TV, films. EXAMPLE:					

*Achievement of Individual Potential Program, Boston Public School District III.

	Never	Seldom	Some-times	Often	Very often
6. Sets high standards for own work at home or in school. EXAMPLE:					
7. Shows interest in art, music, photography, drama, etc. EXAMPLE:					
8. Expresses ideas and opinions well. EXAMPLE:					
9. Participates in adult discussions. EXAMPLE:					
10. Knows a great deal about many things. EXAMPLE:					

COMPLETE THE FOLLOWING QUESTIONS BY CHECKING AS MANY ANSWERS AS ARE APPROPRIATE.

11. What type of activities preferred:

____reading	____organized group	____family activities
____writing	____drawing	____sports
____TV	____with friends	____school activities
____alone	____other (explain: _____)	

EXAMPLES:

12. Participates in creative activities:

____art	____dance	____music
____writing	____photography	____performing
____story telling	____other (explain: _____)	

EXAMPLES:

13. Reading Preference:

____comics ____library books ____magazines
____paperbacks ____newspapers ____how-to books
____other (explain: _____)

EXAMPLES:

14. COMMENTS:

_____ _____
Name of Parent or Guardian Date

NOTE: The selection team reviews the parent inventories and includes those students whose behaviors and interests seem most appropriate for the program. The examples are very important in this process.

Peer Referral Form*

Your Name _____ Person Being Referred _____

Date _____ Grade _____

Answer the following questions as candidly and accurately as possible. Feel free to use the back of this sheet or an additional sheet if necessary.

1. In what capacity do you know the person you are referring? How long have you known him/her?

2. What things about this person led you to think he/she would be a candidate for Project Discovery?

3. Do you see this person as someone who can work independently on something or some project? If left on his/her own, could this person be expected to complete his/her work?

4. In what way is this person creative? For example, could the student interest people around him/her with an original story? Could he/she be bored? Could the person be relied on to come up with something unique and unusual in school or outside of school? A "yes" answer to any of these questions or many others could suggest the person be creative.

5. Is this person organized in his/her work or recreation? Some questions you might ask yourself are: Would I benefit in planning my own project with this person's help? If I gave this student something he/she was capable of doing, would he/she get the job done?

This item may be seen as too much work.

There are a lot of questions in this one item. Could some be a checklist or "fill in the blank"?

* From Project Discovery, Oak Hill High School, Wales, Maine.

Peer Nomination Form

Peer Identification—Creativity—Elementary*

Pretend our class found a puppy on the playground.

A. Which three students would be most likely to think up lots of names for the puppy?
   1. _____ 2. _____ 3. _____
   Which three would make up the *most unusual* names?
   1. _____ 2. _____ 3. _____
   Which three would think of names no one else would think of?
   1. _____ 2. _____ 3. _____
   Which three probably would come up with the name we would finally decide on?
   1. _____ 2. _____ 3. _____

B. Which three students would be most likely to write a story about the puppy?
   1. _____ 2. _____ 3. _____

C. Which three students would probably think up *different* ways to teach the puppy a trick?
   1. _____ 2. _____ 3. _____

D. If we design a collar for our puppy, which three students would probably come up with the *most* designs for a collar?
   1. _____ 2. _____ 3. _____
   the *fanciest* collar?
   1. _____ 2. _____ 3. _____
   the most *unusual* collar?
   1. _____ 2. _____ 3. _____

E. Which three students would make the most suggestions of what could be done with the puppy?
   1. _____ 2. _____ 3. _____

F. Which three would give the teacher the most reasons for allowing the dog to come into the classroom?
   1. _____ 2. _____ 3. _____

*From *Ideas for Identification of Gifted Children in the Area of Creativity*. Franklin County Region 7, Area Service Center for Educators of Gifted Children, Marion, Illinois.

Peer Identification—Creativity—Secondary*

Think about the students in our class. Answer the following questions as completely as possible.

Which three students are the most curious about many things?

1. _____ 2. _____ 3. _____

have the most ideas and solutions to problems?

1. _____ 2. _____ 3. _____

don't seem to care what others think about what they say?

1. _____ 2. _____ 3. _____

like to take chances?

1. _____ 2. _____ 3. _____

have the most fun imagining about situations and things?

1. _____ 2. _____ 3. _____

are most sensitive to the feelings and concerns of others?

1. _____ 2. _____ 3. _____

have the best sense of humor?

1. _____ 2. _____ 3. _____

are aware of and enjoy beautiful things?

1. _____ 2. _____ 3. _____

are not concerned with details?

1. _____ 2. _____ 3. _____

do not care if others think of them as being different?

1. _____ 2. _____ 3. _____

are real individuals?

1. _____ 2. _____ 3. _____

are apt to question authority?

1. _____ 2. _____ 3. _____

Three names are requested to overcome tendency to put only "best friend." The ranking is not so important as the number of times a student is mentioned by peers.

* From *Ideas for Identification of Gifted Children in the Area of Creativity*, Franklin County Region 7, Area Service Center for Educators of Gifted Children, Marion, Illinois.

Recommendation Form*

Recommendation for _____
(Name of Applicant)

Horizons Unlimited is a summer program for gifted adolescents and teachers. We are looking for young people who show extraordinary learning ability and/or high creative potential in the areas of: intellectual ability and academic aptitude, the visual and performing arts, problem solving, leadership and social relationships, craftsmanship (woodwork, metalwork, etc.). They may also have a high degree of insight into themselves and others. We would like you to give us information about this candidate that we cannot get elsewhere. What do you see in this person?

Recommended by _____ Date _____
(Signature)

_____
(Address)

Relationship to Applicant _____
(peer, teacher, counselor, etc.)

Note the description of the program. It will help the writer to highlight particular activities and achievements.

* From Horizons Unlimited, Keene State College, Keene, N. H.

Referral Form

Teacher-Community Member Referral Form*

NAME _____ POSITION IN COMMUNITY/SCHOOL _____

STUDENT BEING REFERRED _____

_____ DATE OF REFERRAL _____

_____

Answer the following questions as candidly and accurately as possible. Feel free to use the back of this sheet if necessary.

1. In what capacity have you known the student? Describe fully your relationship with him/her. For how long have you known the student?
2. What characteristics of the student led you to recommend him/her for Project Discovery?
3. Cite examples of the student's ability to work independently in your contact with him/her. Be specific as to nature and difficulty of such independently offered or assigned work.
4. Cite examples of the student's ability to think creatively or to be creative which might suggest a gifted or talented potential.
5. Cite examples of the student's ability to be organized in his/her thinking or work production.
6. Cite examples of the student's commitment to long-term projects or concepts. Is he/she consistent in such commitment? If so, how is such consistency demonstrated?
7. In your opinion how is, or how has the student a potential to be, an asset to your school/community?

Please complete the following checklist by circling the number which best represents the way you view the student. Give an accurate estimate of the student's makeup. Low scores in some areas may not be negative considering the overall picture you have given of the student.

WORKS WELL IN A GROUP	(low)	1	2	3	4	5	(high)
INQUISITIVENESS	(low)	1	2	3	4	5	(high)
AMBITION	(low)	1	2	3	4	5	(high)
LEADERSHIP	(low)	1	2	3	4	5	(high)
ACADEMIC ACHIEVEMENT	(low)	1	2	3	4	5	(high)
ABILITY TO CONCEPTUALIZE	(low)	1	2	3	4	5	(high)

Some of this form could have been "fill in the blank" to separate different kinds of information.

Some indication of the characteristics pertinent to this program would help.

Sometimes items contain too many questions.

Note the reminders of which number is high and which is low.

* From Project Discovery, Oak Hill High School, Wales, Maine.

Student Application Form*

Name _____ Birth Date _____
Last First Middle Da/Mo/Yr

Home Address _____ Telephone _____

School Address _____ Telephone _____

Sex ___ Male ___ Female Social Security Number _____

Present Grade Level 9th ___ 10th ___ 11th ___ 12th ___

Parents' Name _____

Parents' Address _____ Telephone _____

If not living with your parents, give name and address of person with whom you live:

_____

_____

Parents' Work Address(es) _____

_____ Telephone _____

In Case of Emergency, contact: _____

_____ Telephone _____

School Subjects of Major Interest _____

Interests Outside of School _____

_____

Future Plans Beyond High School _____

_____

The following information is *necessary* to complete your Horizons application:

1. Questionnaire (enclosed)
2. *High School transcript* (Have your school mail it directly to Horizons Unlimited, Keene State College, Keene, N.H. 03431)
3. Three written recommendations—*one from a peer, two from teachers, counselors, clergy or other interested adults (non-relatives).* Recommendation forms are enclosed.
4. Self-portrait (instructions are enclosed)
5. Registration fee of $20.00. This is part of the total program cost and will be refunded only if you are not selected for the program.

It is a good idea to list the necessary forms as a help to the applicant. A checklist could be made.

* From Horizons Unlimited, Keene State College, Keene, N.H.

Creativity Measures

The following are excerpts from creativity tests and questionnaires to help teachers identify creatively gifted and talented individuals.

Talent Survey Form*

You have talents. Your friends, parents or teachers know about some of them. Some only you know. Please list below what you feel to be your talents. Put a check mark by those talents other people know about in the column so marked. Also put a check next to the talent only you know about in the column marked "No One Else Knows About It."

NAME: _____

TALENT I KNOW I HAVE	OTHER PEOPLE KNOW ABOUT IT	NO ONE ELSE KNOWS ABOUT IT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

"Talent" might have been defined a little more, perhaps with an example.

The last column alerts the student to the applicability of talents outside school.

* From Greece Central School District, Greece, N.Y.

In-Class Identification Strategies

E. Paul Torrance has described several activities to help determine an individual's creative ability. Examples of these activities follow.*

ASK-AND-GUESS

One of the clearest and most straightforward models of the creative thinking process is found in the Ask-and-Guess Test, of which there are several different forms. In all forms, subjects are shown a picture and given the following series of instructions:

Asking Questions

> The next three tasks will give you a chance to see how good you are at asking questions to find out things that you do not know and in making guesses about possible causes and consequences of events. Look at the picture. What is happening? What can you tell for sure? What do you need to know to understand what is happening, what caused it to happen, and what will be the result?

Young children are asked to dictate their responses to an adult and older children and adults are asked to write theirs. In the written version, the following instructions are given for the first of the three tasks:

> On this page, write out all of the questions you can think of about the picture on the page before this one. Ask all of the questions you would need to ask to know for sure what is happening. Do not ask questions that can be answered just by looking at the drawing.

The reader who would like to test himself can get a sheet of paper and respond to the foregoing instructions with the stimulus picture, Figure 1. The time limit for the regular test is five minutes but for this demonstrator form it is three minutes. At the end of this article there is a list of the *common responses* carrying a score of zero.

Guessing Causes

After five minutes, subjects are given the following instructions for the second task (Guessing Causes):

> In the spaces below, list as many possible causes as you can of the action shown in the picture. You may use things that might have happened just before the event in the picture or something that happened a long time ago and made the event happen. Make as many guesses as you can. Do not be afraid to guess.

---

*Excerpted from "Examples and Rationales of Test Tasks for Assessing Creative Abilities" by E. Paul Torrance in *Journal of Creative Behavior* 2, no. 3 (1986).

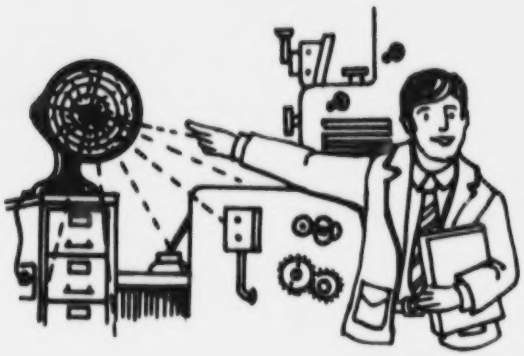

Figure 1

Guessing Consequences

After another five minutes the following instructions are given for the third task (Guessing Consequences):

> In the spaces below, list as many possibilities as you can of what might happen as a result of what is taking place in the picture. You may use things that might happen right afterwards or things that might happen as a result long afterwards in the future. Make as many guesses as you can. Do not be afraid to guess.

The first task is designed to reveal the subject's ability to sense what he cannot find out from looking at the picture and to ask questions that will enable him to fill in the gaps in his knowledge. The second and third tasks are designed to reveal the subject's ability to formulate hypotheses concerning cause and effect. The number of relevant responses produced by a subject yields a measure of ideational fluency. The number of shifts in thinking or number of different categories of questions, causes, or consequences gives one measure of flexibility. The statistical infrequency of these questions, causes, or consequences or the extent to which the response represents a mental leap or departure from the obvious and commonplace gives one measure of originality. The detail and specificity incorporated into the questions and hypotheses provide one measure of ability to elaborate.

In another task, subjects are asked to produce unusual or provocative questions about common objects such as ice, grass, apples, or mountains. Subjects are encouraged to ask questions that lead to a variety of different answers and that might arouse interest and curiosity in others concerning the object.

PRODUCT IMPROVEMENT TASK

The Product Improvement Task calls for the production of clever, interesting and unusual ways of changing a toy stuffed animal (for example, a toy dog like the one in Figure 2) so that it will be more interesting and more fun for children to play with. If you would like to test yourself and see what kind of thinking is involved, try to think of ways of improving the stuffed toy dog. Limit yourself to two and one-half minutes. (In the actual test, ten minutes is allowed for this task.)

You will find a list of the commonplace or zero originality responses listed at the end of this article.

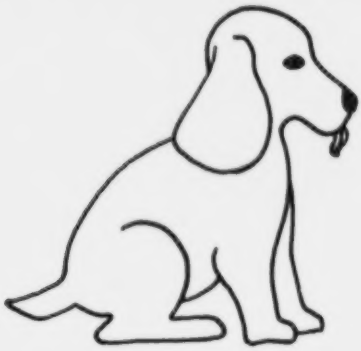

Figure 2

UNUSUAL USES TASK

The Unusual Uses Task calls for interesting and unusual uses of common objects such as junk autos. To understand the kind of thinking that is involved, the reader might spend two and one-half minutes trying to see how many unusual uses of junk autos he can produce. At the end of the article is a list of the common, unoriginal responses that are scored zero for originality.

"JUST SUPPOSE"

The Just Suppose task presents the subject with an improbable situation and asks him to think of all of the things that might occur if that improbability really happened. In other words, the subject must "pretend" that it has happened in order to think of its possible consequences. For example, "Just suppose it was raining and all the drops stood still in the air and wouldn't move—and they were solid." Each "Just Suppose" is accompanied by an interesting drawing depicting the improbable situation. The reader might try this one, also, limiting himself to two and one-half minutes. Again some common, unoriginal responses are listed at the end of this article.

IMAGINATIVE STORIES

The Imaginative Stories Test calls for writing imaginative stories about animals and people having some divergent characteristic. Subjects are asked to select one from a set of ten titles such as:

The Flying Monkey
The Lion That Won't Roar
The Man Who Cries
The Woman Who Can But Won't Talk

SOUNDS AND IMAGES

The Sounds and Images Test asks the subject to produce imaginative and original images suggested by each of a series of four sound effects, ranging from a familiar and well-organized sound effect to one consisting of six rather strange and relatively unrelated sounds. The four-second series is presented three times, and each time the subject is asked to stretch his imagination further.

MOTHER GOOSE

My newest preschool battery consists of five problems based on the world-famous Mother Goose rhymes. The four- and five-year-old children are supplied with booklets containing drawings of the five situations and encouraged to color them while they discuss the problems with the examiner. The children's booklets are used only to make the children psychologically comfortable and are retained by them. An examiner's booklet contains a set of standardized encouraging questions to be used to help the child stretch his thinking. The following is an example of a problem the reader might experiment with, using a time limit of two and one-half minutes:

> If Boy Blue lost his horn, what are all of the ways that he might use to get the cows out of the corn?

Each of the tasks is based on a rationale developed from some research finding concerning the nature of the creative process, the creative personality, or the conditions necessary for creative achievement. The tasks are designed to involve as many different aspects of verbal creative functioning as possible. Most of the tasks are evaluated for fluency (number of different relevant ideas), flexibility (number of shifts in thinking or different categories of response), originality (number of statistically infrequent responses that show creative intellectual energy), and elaboration (number of different ideas used in working out the details of an idea). These are not factorially pure measures and there is some overlap among them, but it has been found that each makes a useful contribution to an understanding of a child's thinking.

FIGURAL BATTERY

Although a variety of figural test tasks have been developed, the standardized batteries consist of three tasks, each designed to tap a somewhat different aspect of creative functioning.

Picture Construction

The Picture Construction Test is accompanied by the following instructions:

> At the bottom of this page is a piece of colored paper in the form of a curved shape. Think of a picture of an object in which this form would be an important part. Then lift up the piece of colored paper and stick it wherever you want it on the next page, just like you would a postage stamp. Then add lines with pencil or crayon to make your picture.
>
> Try to think of a picture that no one else will think of. Keep adding new ideas to your first idea to make it tell as interesting and as exciting a story as you can.
>
> When you have completed your picture, think up a name or title for it and write it at the bottom of the page in the space provided. Make your title as clever and unusual as possible. Use it to help tell your story.

This as well as the other two figural tasks, can be administered at all educational levels from kindergarten to graduate school and to various occupational groups. It is a task to which kindergartners can respond in groups and one which provides sufficient encouragement to regression to be useful with graduate students and other adults. In each battery a different shape (such as a tear drop or jelly bean) is used as the stimulus object.

Figure Completion

The stimulus material for the Figure Completion Test consists of ten incomplete figures and is accompanied by the following instructions:

> By adding lines to figures on this and the next page, you can sketch some interesting objects or pictures. Again, try to think of some picture or object that no one else will think of. Try to make it tell as complete and as interesting a story as you can by adding to and building up your first idea. Make up a title for each of your drawings and write it at the bottom of each block next to the number of the figure.

The reader might test himself with the two figures shown in Figure 3 and then turn to the end of the article to see if he is able to get away from the common, obvious, unoriginal ideas.

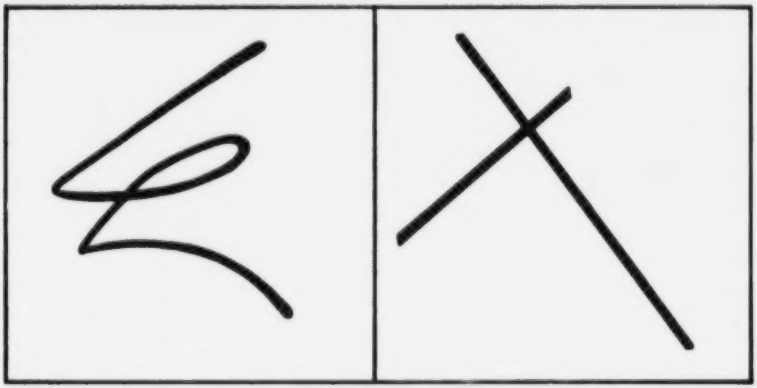

Figure 3

Repeated Closed Figures

The Repeated Closed Figures Test consists of two or three pages of closed figures such as triangles. The instructions for this version of the test are as follows:

> In ten minutes see how many objects or pictures you can make from the triangles.... The triangles should be the main part of whatever you make. With pencil or crayon add lines to the triangles to complete your picture. You can place marks inside them, on them, and outside them—whatever you want to do in order to make your picture. Try to think of things that no one else will think of. Make as many different pictures or objects as you can and put as many ideas as you can in each one. Make them tell as complete and as interesting a story as you can.

As with the other two figural tests, ten minutes is allowed for this task, but in the demonstrator version only two and one-half minutes is given. The common, unoriginal responses are listed at the end of this article....

List of Common, Unoriginal Responses to Demonstrator Form (zero credit for originality)

1. *Ask Questions*

   How can it run connected only to wooden drawers?
   Why is it plugged into chest/table?
   Why is the fan blowing?
   Why is it on the chest of drawers?
   Who is he (man)?
   Is he a teacher?

Whom is he speaking/talking to?
What is he pointing at?
What is he talking about?
Why is he pointing to the fan?
What/what kind of machine is it?
What are the levers/buttons, etc.?
What do the lines represent?
What is in the drawers?

2. *Product Improvement (Toy Dog)*

Bark, make it
Bell, add on neck, feet, etc.
Bow, add
Color, add or change
Cuddly, make it
Ears, bigger, longer
Eyes, bigger, move, wink, sparkle, glow, etc.
Face, give expression, personality
Fluffy, more like real fur
Fuzzy, make
Larger, longer, taller, etc.; legs longer
Mouth, bigger
Movable parts at joints
Music box inside
Noise, have him make
Nose, bigger
Paws, add, make bigger, etc.
Realistic, make
Ribbon, add brighter color, bigger bow, etc.
Smile, make
Softer
Tail, curl up, make longer
Tongue, longer

3. *Unusual Uses (Junk Autos)*

Art, abstract, modern sculpture, pop art
Autos, make one from several
Autos, play on playground
Chairs
Demolition derby
Demonstration, warning for drivers
Educational uses, rebuild to learn, give to teenagers to learn about cars
Flower planter
Playground, pretend cars
Racing
Repair to sell
Scrap iron, metal, etc.

Spare parts, see for use on other cars
Swing, tires used for
Tension reducer, smash with hammer
Tires, recap and sell
Toy on playground

4. *Just Suppose (Rain Still and Solid)*

No water
No grass, no leaves on trees, no flowers, no plant life
People would be bumping into them
Earth would be parched
No fish to catch
Sunshiny, no clouds in sky
No traveling
Airplanes could not fly
Couldn't take a bath
No boating, swimming, etc.
No floods
No need for raincoats
Animals would die
No rivers, creeks, etc.

5. *Incomplete Figures*

Figure 3, left:
Abstract figure
Bird(s)
Human (man, woman, child)
Figure 3, right:
Abstract figure
Horse head or horse body
House
Kite

6. *Repeated Triangles*

Amorphous, indistinct figure
Cottage, house, etc.
Design
Human face
Human figure (man, woman, child)
Star (six-point)
Tent, tepee
Tree
Triangle

Teacher Evaluations of Creativity*

Teacher _____ Grade _____

School _____ Date _____

1. Which children in your class are the most fluent in the production of ideas? These are children who seem to be "just running over with ideas," though not always the most talkative. Some of their ideas may not be of high quality.

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

   Which are the least fluent?

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

2. Which children in your class are the most flexible in their thinking and in the production of ideas? When one plan or procedure fails, they come up immediately with a different approach. They employ a variety of strategies or approaches in solving problems. They readily abandon unproductive approaches although they do not abandon the goal: they simply find some other way of achieving the goal.

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

   Which are the least flexible?

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

* Reproduced from *Torrance Tests of Creative Thinking, Norms—Technical Manual* by E. Paul Torrance (Lexington, Mass.: Personnel Press, 1974).

3. Which children in your class are the most original in their thinking? They are able to get away from the obvious and the commonplace and break away from the beaten path. They see relationships and think of ideas and solutions which are different from others in the class and from the textbook. Many, though not all, of their ideas prove to be useful. Some of their ideas are quite surprising, though true.

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

   Which are the least original?

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

4. Which children in your class are the best in elaborating ideas? They are able to take an idea or a task and spell out the detail. They can take a simple idea and "embroider" it or make it fancy and attractive. Their drawings are very detailed and they are able to develop very detailed or thorough plans for projects.

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

   Which are least able to elaborate?

   1. _____
   2. _____
   3. _____
   4. _____
   5. _____

Sources of Instruments

This compilation of test instruments is intended to provide a general overview of the variety of tests available for identification of students. We do not mean to imply that these are the only tests available, nor that they are necessarily the best. These instruments should be considered in light of the individual school's goals, program, and resources.

A LIST OF REPRESENTATIVE TESTS FOR THE SIX U.S.O.E. TALENT AREAS

U.S.O.E. Talent Area Area I: General Intellectual Ability

Title of Instrument	Age Range	Scores	Time	Publisher [1]	MMY or TIP [2] Ref.
INDIVIDUAL TESTS					
Peabody Picture Vocabulary Test (PPVT)	2½-18 years	Mental Age, Deviation I.Q.	10-15 min.	American Guidance Service	7:417
Progressive Matrices (Raven)	5 years and over	Percentiles	60 min.	Psychological Corporation	7:376
Slosson Intelligence Test (SIT)	2 weeks and over	Mental Age, I.Q.	30 min.	Slosson Educational Publications Dublin, N.H. 03444	7:424
Stanford Binet Intelligence Scale	2-18 years	Mental Age, I.Q.	30-90 min.	Houghton-Mifflin Company	7:425
Wechsler Adult Intelligence Scale (WAIS)	16-64 years	Verbal I.Q. Performance I.Q. Full Scale I.Q.	60-90 min.	Psychological Corporation	7:429
Wechsler Intelligence Scale for Children—Revised (WISC)	6-16 years	Verbal I.Q. Performance I.Q. Full Scale I.Q.	60-90 min.	Psychological Corporation	7:431
Wechsler Primary and Preschool Scale of Intelligence (WPPSI)	4-6½ years	Verbal I.Q. Performance I.Q. Full Scale I.Q.	60-90 min.	Psychological Corporation	7:434

[1] A list of the test publishers follows.
[2] MMY reference is the Mental Measurements Yearbooks volume and entry number for the latest review of the test listed. TIP refers to Tests in Print II. It is recommended that MMY and TIP citations be reviewed before an instrument is used.

SOURCE: "Identification and Evaluation Procedures for Gifted and Talented Programs" by Ron Rubenzer, *Gifted Child Quarterly* 23, no. 2 (Summer 1979): 313–16.

Title of Instrument	Age Range	Scores	Time	Publisher	MMY or TIP Ref.
GROUP TESTS					
California Tests of Mental Maturity 1963 Revision (CTMM)	4-16	Standard Scores	90 min.	California Test Bureau	7:338
Large-Thorndike Intelligence Tests	K-12	Verbal and Nonverbal Deviation I.Q. Age, grade, percentiles	K-3rd = 35 min. 4-12th = 90 min.	Houghton-Mifflin Company	7:360
Otis-Lennon Mental Ability Test	K-16	Deviation I.Q. Percentiles & Stanines	30 min.	Harcourt, Brace & World	7:370
Short Form of Academic Aptitude	1.5-12	Verbal and Nonverbal Total	30-45 min.	CTB/McGraw-Hill Book Co. 330 W. 42nd St. New York, N.Y. 10036	7:387
U.S.O.E. Area II: Specific Academic Aptitude					
INDIVIDUAL TESTS					
Gates-MacGinitie Reading Tests	K-12	Vocabulary-comprehension	120 min. (8 sub-tests)	Teachers College Press	7:689
Key Math Tests	K-7	15 scores involving content, operations, applications	30 min.	American Guidance Service	721 TIP
Metropolitan Readiness Tests	K-1	7 or 8 scores	75 min.	Harcourt, Brace & World	7:757
Peabody Individual Achievement Test (PIAT)	K-12	6 scores—math, reading comp., spelling, gen. info. total	30-40 min.	American Guidance Service	7:17

Title of Instrument	Age Range	Scores	Time	Publisher	MMY or TIP Ref.
Woodcock Reading Mastery Test	K-12	6 scores—letter and word ident., word attach, word comp., passage comp. total	45 min.	American Guidance Service	1656 (TIP)
GROUP TESTS					
Iowa Tests of Basic Skills	3-9	Grade Equivs., Percentiles and others	279 min. (4 sessions)	Science Research Associates	6:13
Metropolitan Achievement Test	1-12	Grade Equivs., Percentiles and others	227-316 min. (in sessions)	Harcourt, Brace & World	7:14
Sequential Tests of Educational Progress (STEP)	4-14	Grade Equivs., Percentiles and others	240 min. (3 sessions)	Educational Testing Service (Cooperative Test Division)	6:25
Stanford Achievement Test	1-12	Grade Equivs., Percentiles and others	303 min. (in sessions)	Harcourt, Brace & World	7:25
TEACHER SCREENING DEVICES					
Cupertino School District, Extended Learning Program: Screening and Nomination Form	K-12	Weighted scores in cognitive & non-cognitive areas.	Not indicated.	Programs for Gifted Students Educational Improvement Center Woodbury Glassboro Road—Box 426 Pitman, N.J. 08071	

Title of Instrument	Age Range	Scores	Time	Publisher	MMY or TIP Ref.
Multi-Dimensional Screening Device (MDSD)	2-7	Numerical rating in 10 talent areas. Appropriate for Disadvantaged.	2-3 hrs. whole class	Hella Kranz Fairfax County Public Schools 10700 Page Ave. Fairfax, Va. 22030	
Reservoir Model for Identification of the Gifted and Talented	K-12	A general screening process.	Not indicated.	Gowan, J. C. "How to Identify Students for a Gifted Child Program," **Gifted Child Quarterly, XIX,** (3), 1975, 260-263.	
Scales for Rating the Behavioral Characteristics of Superior Students	K-12	Numerical rating in 10 talent areas.	Not indicated.	Joseph Renzulli Creative Learning Press P.O. Box 320 Mansfield Center, Ct. 06250	
U.S.O.E. Area III: Creative or Productive Thinking					
INDIVIDUAL TESTS					
Creativity Tests for Children (CTC)	4-6	10 tests—measures Guilford's divergent production abilities.		Sheridan Psychological Services	554 (TIP)
Remote Associates Test (RAT)	9-16, and adults	Measures ability to think creatively	40-45 min.	Houghton-Mifflin Co.	7:445
Torrance Tests of Creative Thinking	K-Grad. School	Verbal & Pictorial scores in fluency, flexibility, originality, & elaboration	Verbal—60 min. Nonverbal—45 min. (can be given without time constraints)	Personnel Press 191 Spring St. Lexington, Mass. 02173	7:448

Title of Instrument	Age Range	Scores	Time	Publisher	MMY or TIP Ref.
GROUP TESTS					
Alpha-Biographical Inventory	9-12	Creativity; Academic performance in College.	90-120 min.	Prediction Press P.O. Box 298 Greensboro, N.C. 27402	7:975
The Adjective Check List	9-16, and adults	24 scores related to creativity	15-20 min.	Consulting Psychologists Press, Inc.	7:38
		U.S.O.E. Area IV: Leadership Ability			
INDIVIDUAL TESTS					
Personal Interview Techniques	9-12			Research and Guidance Laboratory University of Wisconsin Madison, Wisconsin Educational Science I Bldg. 1025 W. Johnson Street Madison, Wisconsin	
GROUP TESTS					
Leadership scale of the Multi-dimensional Screening Device	REFER TO SPECIFIC ACADEMIC APTITUDE SECTION.				
Leadership scale of the Scales for Rating the Behavioral Characteristics of Superior Students	REFER TO SPECIFIC ACADEMIC APTITUDE SECTION.				

U.S.O.E. Area V: Visual and Performing Arts

Title of Instrument	Age Range	Scores	Time	Publisher	MMY or TIP Ref.
INDIVIDUAL TESTS					
Music: Seashore Measure of Musical Talents, Revised Edition	4-16	6 scores—pitch, loudness, rhythm, time, timbre, tonal measure	60 min.	Psychological Corp.	6:353
Art: Horn Art Aptitude Inventory	12-16, and adults	Scribbling and doodling, and imagery.	50 min.	Horn Stoeltling Co. 1350 South Kostner Avenue Chicago, Ill. 60623	5:242
Meier Art Tests	7-16, and adults	Percentile Norms for Art Judgment Aesthetic Perception	60 min.	Bureau of Educational Research and Service University of Iowa Iowa City, Iowa 25240	7:240

U.S.O.E. Area VI: Psychomotor Ability

INDIVIDUAL TEST					
Performance Scale I.Q.'s of the Wechsler Series	REFER TO GENERAL INTELLECTUAL ABILITY (INDIVIDUAL TESTS)				
GROUP TESTS					
Guilford Zimmerman Aptitude Survey	9-16, and adults	7 aptitude areas investigated	163 min. (7 tests)	Sheridan Psychological Services	6:772
Differential Aptitude Tests	8-12	Stanines and Percentiles	240 min. (2–6 sess.)	Psychological Corp.	7:673

Selected Test Publishers

American Guidance Service, Inc., Publishers' Building, Circle Pines, Minn. 55014.
California Test Bureau, Del Monte Research Park, Monterey, Calif. 93940.
Educational Testing Service, Princeton, N.J. 08540.
Harcourt, Brace & World, Inc., 757 Third Avenue, New York, N.Y. 10017.
Houghton Mifflin Company, 110 Tremont Street, Boston, Mass. 02107.
Psychological Corporation, 304 East 45th Street, New York, N.Y. 10017.
Science Research Associates, Inc., 259 East Erie Street, Chicago, Ill. 60611.
Sheridan Psychological Services, P.O., Box 837, Beverly Hills, Calif. 90213.
Teachers College Press, Teachers College, 525 West 120th Street, New York, N.Y. 10027.

MMY and TIP references can be located in the following publications:

Buros, O.K. (Ed.) *Tests in Print II*, Highland Park, New Jersey, The Gryphon Press, 1974.

Buros, O.K. (Ed.) *The Seventh Mental Measurements Yearbook*, Highland Park, New Jersey, The Gryphon Press, 1972.

Buros, O.K. (Ed.) *The Sixth Mental Measurements Yearbook*, Highland Park, New Jersey, The Gryphon Press, 1972.

Buros, O.K. (Ed.) *The Fourth Mental Measurements Yearbook*, Highland Park, New Jersey, The Gryphon Press, 1972.

TESTS FOR ASSESSING HIGHER-LEVEL THINKING BEHAVIOR*

TEST	AUTHOR	VARIABLE TESTED	SOURCE	AGE
1. Butch and Slim, Test of Propositional Logic	J. Ward	Analysis (Propositional Logic)	J. Ward, "The Saga of Butch and Slim," **British Journal of Educational Psychology** 42:267–289, 1972	8–adolescent
2. Classification Tasks	Mary Nixon	Analysis	Senior Advisory Officer Psychological Services, Australian Council for Educational Research, P.O. Box 219, Hawthorn, Victoria, Australia 3122	4–8 years
3. Cornell Class, Reasoning Test, Form X	Robert H. Ennis William L. Gardiner Richard Morrow Dieter Paulus Lucille Ringel	Evaluation (class reasoning)	Illinois Critical Thinking Project, 371 Education Building, University of Urbana-Champaign, Urbana, Illinois 61801	10–18 years
4. Cornell Conditional Reasoning Test, Form X		Evaluation (class reasoning)	Illinois Critical Thinking Project, 371 Education Building, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801	10–18 years
5. Inquiry Skill	Daniel Solomon Arthur Kendall	Synthesis (developing a strategy)	Daniel Solomon, Psychological Services Section, Montgomery County Public Schools, 850 Hungerford Drive, Rockville, Maryland 20850	9–15 years

* Adapted from a list compiled by Donald Rasca, 1978.

TEST	AUTHOR	VARIABLE TESTED	SOURCE	AGE
6. Literature Formal Reasoning Test	William M. Bart	Analysis (formal reasoning)	William M. Bart, Department of Psychological Foundations, College of Education, 330 Burton Hall, University of Minnesota, Minneapolis, Minnesota 55455	14 and up
7. Means-Ends Problem-Solving (MEPS)	Jerome J. Platt George Spivack	Synthesis	Division of Research and Evaluation, Department of Mental Health Sciences, Hahnemann Medical College and Hospital, 314 North Broad Street, Philadelphia, Pennsylvania 19102	6–adult
8. Object Sorting Task (OST)	James A. Dunn	Synthesis (fluency)	The OST: Theory, Instrument and Norms, James A. Dunn, American Institute for Research, P.O. Box 1113, Palo Alto, California 94302	5 and up
9. Ordering Tasks	Barbara Brandes Susan Rindler	Analysis	Research for Better Schools, Inc., Public Information Office, 1700 Market Street, Philadelphia, Pennsylvania 19103	10–14 years
10. Paulus Conditional Reasoning Test, Form Z (assessing)	Dieter Paulus	Evaluation (conditional reasoning)	Dieter H. Paulus, U-64, Department of Educational Psychology, University of Connecticut, Storrs, Connecticut 06268	12–16 years

TEST	AUTHOR	VARIABLE TESTED	SOURCE	AGE
11. Pictorial Class Inclusion Problems	Giyoo Hatano Keiko Kuhara	Analysis (class inclusion)	A complete manual of the test can be obtained from Giyoo Hatano, 7-12 Honkomgome-6, Bunkyo-ku, Tokyo, 113, Japan (no charge)	5–7 years
12. Purdue Elementary Problem Solving Inventory	John Feldhusen John Houtz Susan Ringenbach	Multiple (Analysis, Synthesis, and Evaluation	John Feldhusen, Educational Psychology and Research Section, Purdue University, SCC-G Lafayette, Indiana 47907	5–11 years
13. Ross Test of Higher Cognitive Processes	John D. Ross Catherine Ross	Analysis	Academic Therapy Publications, P.O. Box 899, 1539 4th Street, San Rafael, California 94901	Intermediate
14. The Tests of Pre-Literature Thinking Aptitude	Rachel S. Ball	Multiple (Analysis and Synthesis)	"A Longitudinal Assessment of Thinking Ability of Preliterate Children During a 2-Yr. Period," Rachel Ball, Arizona State University, Tempe, Arizona 85281	3–5 years
15. Khatena-Torrance Creative Perception Inventory	Khatena and Torrance	Affective	Manual for Khatena-Torrance Creative Perception Inventory, Stoeltling Company, 1350 South Kostner Avenue, Chicago, Illinois 60623	Adolescent and up
16. Scale of Academic Curiosity	Derek C. Vidler Hashim R. Rawan	Affective	Derek Vidler, Box 1661, Hunter College of City University of New York, New York, New York 10021	8 and up

TEST	AUTHOR	VARIABLE TESTED	SOURCE	AGE
17. Ascher-Gallagher System	Mary Jane Ascher and others	Cognitive	Mary J. Ascher, et al., "A System for Classifying Thought Processes in the Context of Classroom Verbal Interaction," Institute for Research on Exceptional Children, University of Illinois, Urbana, Illinois	Any classroom
18. Cognitive Levels Analysis Interaction Model	Kenneth Shrable Douglas Minnis	Cognitive	Kenneth Shrable and Douglas Minnis, "Interacting in the Interrogative," **Journal of Teacher Education** 21: 201–12, 1969	Any classroom
19. Florida Taxonomy of Cognitive Behaviors	Bob Burton Brown and others	Cognitive	Brown, Bob Burton, et al., "The Florida Taxonomy of Cognitive Behaviors: Directions," University of Florida, Gainesville, 1967	Any classroom
20. Taba System	Hilda Taba and others	Cognitive, Affective, and Procedural		Any classroom
21. Waimon System	Morton D. Waimon	Cognitive, Affective, and Procedural	Morton D. Waimon and Henry J. Hermanzwicz, "Helping Prospective Teachers Classify and Study Teaching Behavior," **Teachers College Journal** 38: 97–102, 1966	Any classroom

Implementing an Identification Program

The following material from the New York State Education Department provides nineteen detailed steps for establishing and implementing a general identification procedure.

IMPLEMENTING AN IDENTIFICATION PROGRAM

Task	Activity	Product	Resource
PHASE ONE: PLANNING			
1. Identify leadership	as determined by local district	one assigned person who has support of the superintendent and board of education, and others from the school and community to serve as a task group	
	develop an understanding of gifted/talented students and programs in general		
2. Conduct a needs assessment	survey student characteristics	assessment of local test scores and profiles of students' capabilities and achievements as indicated by intelligence and achievement test scores	subjective and objective information from teachers, counselors, psychologists, and administrators
	survey student interests	results of an interest survey	STUDENT INTEREST SURVEY
	survey curricular and extracurricular provisions/programs currently available within the school	assessment of local district provisions/programs for gifted/talented and degree of teacher interest and commitment	teachers and administrators
	survey community interests and provisions for programs	assessment of community interest and possibilities for support of specific programs	parents, members of the community and civic organizations and clubs
		recommendation to maintain current provisions/programs, strengthen existing ones, or develop new options	New York State Education Department publication **A Survey of Education for the Gifted and Talented in New York State in 1974–75**

SOURCE: *Guidelines for the Identification of the Gifted and Talented*. University of the State of New York, State Education Department, Albany, 1977.

Task	Activity	Product	Resource
PHASE TWO: ORGANIZING			
3. Develop statement of philosophy for meeting the needs and interests of the gifted and talented	involve parents, educators, and members of the community	statement of philosophy accepted by local board of education	New York State Education Department Position Paper No. 23, **Educating the Gifted and Talented in New York State**
	relate local district philosophy to the special needs of the gifted in a written document to be approved by the board of education		
4. Provide awareness among faculty	present awareness workshop(s) which bring teachers up to date on data from needs assessment activities and findings	faculty motivated to go into PHASE THREE	Board of Cooperative Educational Services, Local, and State Education Department personnel
5. Develop a written plan for activities in PHASES THREE and FOUR	analyze this model and adapt it to local needs; include personnel designations, time lines, and objectives	written plan, approved by administration	teachers, administrators, parents, and members of the community
PHASE THREE: SET PRIORITIES			
6. Identify one or more **specific** fields for K–12 programming; i.e., biological sciences rather than "science," gymnastics rather than "movement"	identify societal and community concerns and resources	list of human and technical resources categorized by area (music, art, science, et al.)	
	analyze results of student interest survey	summary of students' specific interests (types, locations, age levels, continuity)	results of previously administered STUDENT INTEREST SURVEY
Identify a target group (gifted, talented, potentially gifted) for identification and programming	match student needs, characteristics, and interests with current district and community opportunities		teachers, administrators, parents, members of community, and yellow pages of telephone books

Task	Activity	Product	Resource
	identify gaps where interested students have no opportunities identify teacher strengths identify program strengths list programs, facilities, events, and people in the community who do or could provide systematic instructional opportunities for gifted/talented students	recommendations for program priorities	suggested criteria: • high student interest • competent instruction available • materials and facilities available
7. Inform teachers and parents; gain their interest, support, and commitment	use faculty meetings, conference days, newsletters, et al., for inservice and communication	increased cooperation	
8. Allocate resources	persuade the Board of Education to allocate or reallocate resources to meet the needs of talented and gifted students	a budget	administrators, parents, members of the community, and advocacy groups
PHASE FOUR: NOMINATION AND IDENTIFICATION			
9. Determine broad program goals, objectives, and evaluation plan	study the literature; analyze existing programs in other school districts provide for the collection of data: rating scales time needed for administration; inservice; evaluation; cost for revisions; objective instruments	written program goals, objectives, and general evaluation plan for students who are functionally or potentially talented and/or gifted in fundamental skills, creative problem-finding/solving skills, and personal characteristics	the model proposed in this publication; Title IV-C projects in New York State

Task	Activity	Product	Resource
	cost; availability; effectiveness; provide for inservice content; amount; quality; effectiveness; costs		
10. Set program parameters	define "gifted" for local district planning purposes define "talented" and "potentially gifted" for local district planning purposes accept, adapt, or reject the model provided in this publication determine: maximum/minimum number of students to be programmed, nature of program (for talented and/or gifted); location, amount of time, resource teachers, grade levels, role of the school, role of the community	a model for identification and programming a broad description of the program, including definitions of students involved (specific objectives for curriculum and instruction will need to be written in terms of the needs and characteristics of identified students)	this publication, professional journals, and consultants
11. Set criteria for selection of students	study the literature; analyze this publication	criteria for final selection (number, age levels, et al.)	
12. Develop nomination instruments	as an inservice activity involve teachers in the process of adapting the nomination forms provided in this guide identify a task group to manage nomination process	locally designed nomination forms	suggested criteria: information requested should (1) be program specific; (2) provide for a broad sweep of possible talented and/or gifted students; (3) be general and related primarily to performance or potential

Task	Activity	Product	Resource
			performance in activities requiring use of the fundamental and creative problem-finding/solving skills, rather than personal characteristics; (4) be independent of reading and writing
	select individuals and student groups who will be asked to make nominations		suggestions for use of nomination forms: the STUDENT SELF-ASSESSMENT FORM should be filled out by every student who indicated high interest in the priority area and spends a great amount of time at the activity; the ADULT NOMINATION FORM is intended for appropriate members of the community, educators, and parents; the PEER NOMINATION FORM is for all students at the grade level(s) selected for programming
13. Obtain a pool of students	make a master list of all nominated students, assign a number to each one; analyze information from SELF ASSESSMENT FORMS	pool of students for Step 14	criteria for inclusion in pool: nomination from two sources; student indicates extensive interest and capability
14. Select instruments for collection of objective data concerning nominated students	analyze locally available objective data-gathering instruments such as group intelligence tests, individual intelligence tests,	selected instruments	criteria for selection includes: applicability to the identification model;

Task	Activity	Product	Resource
	appropriate sections of achievement tests, and standardized aptitude, personality, or creativity tests consult the literature for descriptions of additional tests		relevance and usefulness of group IQ scores to the priority field availability of individual IQ test scores; availability of special aptitude or skill tests; availability and usefulness of achievement test scores; availability of item analysis of items of test sections related to the priority field
15. Develop/select subjective data-gathering instruments	collect rating scales from varied sources adapt rating scales to the priority area select additional subjective materials for inclusion in the selection process, such as autobiographies, cumulative records, records of counselors, and parental interviews and questionnaries	rating scales for local district priority area(s) additional subjective materials	criteria include applicability to the identification model; appropriateness of rating scale items for fundamental skills to the priority field; appropriateness of rating scale items for creative problem-finding/solving steps and student characteristics; availability of opportunities to rate the problem-finding/solving skills; availability of student products; availability of adults to use scales and rate student products, processes and/or performances RATING SCALE: Fundamental Skills and Abilities

Task	Activity	Product	Resource
			RATING SCALE: Creative Problem-Finding/Solving Skills RATING SCALE: Personal Characteristics
16. Design a format for data analysis	analyze characteristics of data-gathering instruments develop summary matrices for objective and subjective data or adapt SAMPLE MATRICES included in this publication	Matrix for subjective data Matrix for objective data	criteria for summary matrices: 1) manageable format 2) easily analyzed 3) ratings must be transformed to numbers see sample summary matrices for objective and subjective data
17. Provide inservice training for use of data-collection instruments	involve teachers in the adaptation of instruments use faculty meetings to bring all faculty up to date on the processes		
18. Identify students	administer subjective and objective data gathering instruments; identify members of a Selection Committee develop criteria and cutoff points; rank students; use a cutoff figure of twice the number of stu-	Selection Committee including an administrator, a teacher, a special teacher, a guidance counselor or psychologist, a parent, and appropriate others to examine the data collected for the students group of students who meet specific selection criteria	each rating scale should be used by a minimum of two adults use products developed in Step 11

Task	Activity	Product	Resource
	dents to be accommodated by the program select decision-making committee	final selection of students for programming	
19. Evaluate identification processes and (revised) instruments	evaluate information collected	recommendations for: revised identification program; revised curriculum and instruction to facilitate identification; initiation of "threshold" programs specially designed to encourage development of talents and gifted among minorities and women	criteria may include: number of females identified compared with percentage to be expected number of functionally talented and/or gifted identified number of potentially talented and/or gifted identified number of minority students compared with expectations criteria used in Steps 14 and 15 should also be applied

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Mobile, AL 36604

Gifted Child Quarterly
National Association for Gifted Children
4175 Lovell Road, Suite 140
Circle Pines, MN 55014

Gifted Children Monthly
213 Hollydell Drive/P.O. Box 115
Sewell, NJ 08080

Gifted International
College of Education
University of South Florida
Tampa, FL 33620

Journal of Creative Behavior
Creative Educational Foundation, Inc.
State University College
1300 Elmwood Avenue
Buffalo, NY 14222

Journal for the Education of the Gifted
Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

National/State Leadership Training Institute on the Gifted and Talented *Bulletin*
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Art and Multi-Sensory Experience (filmstrip series)
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More Than a Glance (film)
Who Is the Gifted Child? (filmstrip)
Audiovisual Services
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County Office Building
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Simple Gifts (videotapes)
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Sit Down, Shut Up, or Get Out (film)
Broadcasting and Film Commission
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Talks with Teachers About Gifted and Talented Students:
Characteristics
Identification
Parents of the Gifted and Talented: A Teacher's View
A Parent's View of Gifted and Talented Children
(audiotapes)
NEA Professional Library
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Threat or Invitation:
Characteristics of Gifted and Talented
Identification of Gifted and Talented
(videotapes by Frederick B. Tuttle, Jr., and Laurence A. Becker)

Educational Communications Center
State University of New York, College at Brockport
Brockport, NY 14420

Understanding the Gifted (film)
Churchill Films
662 North Robertson Boulevard
Los Angeles, CA 90069

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